A Review of Regulatory Approaches to Contaminated Site Management

Alberta
Environment

105-01751/

A Review of Regulatory Approaches to Contaminated Site Management

Prepared by:
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for:
Alberta Environment

March 2004

Pub. No: T/756
ISBN No. 0-7785-3209-7 (Printed Edition)
ISBN No. 0-7785-3210-0 (On-line Edition)
Web Site: http://www.gov.ab.ca/env/info/infocentre/publist.cfm

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Table of Contents

Executive Summary v

1.0 Introduction 1
1.1 Project scope and terms of reference 1
1.2 The Alberta context 1
1.3 Project approach 2
  1.3.1 Issues addressed 2
  1.3.2 Jurisdictions reviewed 3
  1.3.3 Stakeholder input 3

2.0 Canadian jurisdictions 4
2.1 Overview of all Canadian jurisdictions 4
2.2 Review of selected Canadian jurisdictions 6
  2.2.1 Alberta 7
    2.2.1.1 Statutory authority 7
    2.2.1.2 Voluntary cleanup 8
    2.2.1.3 Brownfields 8
    2.2.1.4 Liability standards 9
    2.2.1.5 Regulatory tools 11
  2.2.2 British Columbia 14
    2.2.2.1 Statutory authority 14
    2.2.2.2 Voluntary cleanup 15
    2.2.2.3 Brownfields 16
    2.2.2.4 Liability standards 17
    2.2.2.5 Regulatory tools 20
  2.2.3 Ontario 23
    2.2.3.1 Statutory authority 23
    2.2.3.2 Voluntary cleanup 24
    2.2.3.3 Brownfields 24
    2.2.3.4 Liability standards 26
    2.2.3.5 Regulatory tools 28
  2.2.4 Quebec 30
    2.2.4.1 Statutory authority 30
    2.2.4.2 Voluntary cleanup 31
    2.2.4.3 Brownfields 31
    2.2.4.4 Liability standards 32
    2.2.4.5 Regulatory tools 33

3.0 American state jurisdictions 35
3.1 Introduction 35
3.2 State Superfund programs 35
3.3 State activities 36

3.3.1 Voluntary cleanup ... 36
  3.3.1.1 Authority ... 37
  3.3.1.2 Eligibility ... 37
  3.3.1.3 Cleanup standards ... 37
  3.3.1.4 Incentives ... 37
  3.3.1.5 Funding ... 38
3.3.2 Brownfields ... 38
  3.3.2.1 Cleanup standards ... 39
  3.3.2.2 Incentives ... 39
3.3.3 Liability standards ... 39
  3.3.3.1 State culpability standards ... 40
  3.3.3.2 State allocation standards ... 40
  3.3.3.3 Retroactive liability ... 41
3.3.4 Cleanup criteria ... 41
3.3.5 Regulatory tools ... 42
3.3.6 Property transfer ... 43
3.3.7 Long term stewardship ... 43
3.4 State Comparison – Massachusetts, Michigan, California, and Oklahoma .. 44
3.4.1 Massachusetts ... 44
  3.4.1.1 Statutory authority ... 44
  3.4.1.2 Voluntary cleanup ... 44
  3.4.1.3 Brownfields ... 45
  3.4.1.4 Liability standards ... 45
  3.4.1.5 Regulatory tools ... 45
  3.4.1.6 Cleanup criteria ... 45
  3.4.1.7 Property transfer ... 46
  3.4.1.8 Long term stewardship ... 46
  3.4.1.9 Funding ... 46
3.4.2 Michigan ... 46
  3.4.2.1 Statutory authority ... 46
  3.4.2.2 Voluntary cleanup ... 47
  3.4.2.3 Brownfields ... 47
  3.4.2.4 Liability ... 47
  3.4.2.5 Regulatory tools ... 48
  3.4.2.6 Cleanup criteria ... 48
  3.4.2.7 Property transfer ... 49
  3.4.2.8 Long term stewardship ... 49
  3.4.2.9 Funding ... 49
3.4.3 California ... 50
  3.4.3.1 Statutory authority ... 50
  3.4.3.2 Voluntary cleanup ... 50
  3.4.3.3 Brownfields ... 50
  3.4.3.4 Liability ... 50
  3.4.3.5 Regulatory tools ... 51
  3.4.3.6 Cleanup criteria ... 51
  3.4.3.7 Property transfer ... 51

3.4.3.8 Long term stewardship ... 51
3.4.3.9 Funding ... 51
3.4.4 Oklahoma ... 52
3.4.4.1 Statutory authority ... 52
3.4.4.2 Voluntary cleanup ... 52
3.4.4.3 Brownfields ... 52
3.4.4.4 Liability ... 53
3.4.4.5 Regulatory tools ... 53
3.4.4.6 Cleanup criteria ... 53
3.4.4.7 Property transfer ... 53
3.4.4.8 Long term stewardship ... 54
3.4.4.9 Funding ... 54

4.0 United Kingdom ... 54
4.1 Introduction ... 54
4.2 Statutory authority ... 55
4.3 Activities ... 58
4.3.1 Voluntary cleanup ... 58
4.3.2 Brownfields ... 58
4.3.3 Liability standards ... 59
4.3.4 Cleanup criteria ... 61
4.3.5 Regulatory tools ... 62
4.3.6 Property transfer ... 65
4.3.7 Long term stewardship ... 65

5.0 Netherlands ... 66
5.1 Introduction ... 66
5.2 Statutory authority ... 67
5.3 Activities ... 68
5.3.1 Voluntary cleanup ... 68
5.3.2 Brownfields ... 69
5.3.3 Liability standards ... 72
5.3.4 Cleanup criteria ... 72
5.3.4.1 Scientific considerations ... 73
5.3.4.2 Policy considerations ... 76
5.3.5 Regulatory tools ... 77
5.3.6 Long term stewardship ... 77

6.0 Analysis ... 78

APPENDIX A ... 81

APPENDIX B ... 84

APPENDIX C ... 88

APPENDIX D - SUMMARY TABLE OF CONTAMINATED LAND PROGRAMS IN FOUR SELECTED PROVINCES 89

APPENDIX E - SUMMARY TABLE OF CONTAMINATED LAND PROGRAMS IN FOUR SELECTED STATES 91

APPENDIX F 93

APPENDIX G 94

Executive Summary

The Environmental Law Centre was retained by Alberta Environment to carry out a review of regulatory approaches to contaminated land management, focusing on specified contaminated land issues of significance in Alberta. These issues are:

- Brownfields and voluntary cleanup;
- Liability matters, including allocation and termination of liability;
- Retrospective application of contaminated land legislation and liability;
- Triggers (initiating circumstances or conditions) for the use of contaminated land legislation and regulatory tools; and
- Effects of changing remediation objectives on liability and remediation obligations.

The review includes an analysis and critique of the regulatory approaches, and concludes with recommendations regarding possible regulatory options for consideration by Alberta Environment. However, this review does not address common law remedies available in Alberta and other jurisdictions to deal with contaminated land, nor does it cover the wide range of contaminated lands that are dealt with on a voluntary basis wholly outside the regulatory system.

Project methodology

This project involved various tasks. The contaminated land issues mentioned above were identified for consideration in the review of other jurisdictions' regulatory approaches to contaminated land management. Canadian, American and European jurisdictions were selected for review; Canadian jurisdictions were reviewed in greater detail, while the other selected jurisdictions were examined in a more general fashion. A range of stakeholders that had been involved in initial development of Alberta's contaminated land management policy and legislation in the early 1990's were canvassed regarding their views on contaminated land issues in Alberta.

Review of Canadian jurisdictions

The review of Canadian jurisdictions was broken into two parts. The first part was an overview of all jurisdictions to determine the existence of contaminated land management legislation and the application in such legislation of contaminated site liability principles recommended on a national basis in 1993. All Canadian jurisdictions have some form of environmental legislation that enables management of contaminated land, although some do so through provisions related to control of substance or contaminant releases, rather than provisions specifically directed to contaminated land. With respect to the application of nationally recommended contaminated site liability

principles, five jurisdictions have incorporated most or all of these principles into their legislation related to contaminated land management. Two jurisdictions have incorporated about half of the principles into their legislation and all other Canadian jurisdictions have incorporated only a few of the principles into their legislation. Information related to Canadian legislation and incorporation of the liability principles is set out in Appendices A – C.

The second part of the review of Canadian jurisdictions focused on a more detailed review of the regulatory systems for contaminated land management found in Alberta, British Columbia, Ontario and Quebec. The most current legislation in each jurisdiction was reviewed and assessed in relation to the issues specified for this project. A summary comparing the regulatory systems for Alberta, British Columbia, Ontario and Quebec is attached as Appendix D.

Review of other jurisdictions

Some jurisdictions outside Canada were reviewed in a more general fashion regarding their legislative and regulatory systems for contaminated land management, with attention focused on the issues specified for this project. Four American states (Massachusetts, Michigan, California and Oklahoma) were reviewed and discussed; a general introduction to the broad American approach to dealing with contaminated land management was also provided. A summary comparing the regulatory systems for Massachusetts, Michigan, California and Oklahoma is attached as Appendix E.

General reviews were also carried out for the contaminated land management systems found in the United Kingdom and the Netherlands. Appendices F – G provide summaries of those jurisdictions' systems.

Analysis

The review of the various jurisdictions revealed some elements in common with Alberta's system of contaminated land management. All jurisdictions reviewed include the "polluter pays" principle as an important element of their regulatory systems and almost all provide for retrospective application of their legislation in relation to contaminated land.

Analysis of the jurisdictions reviewed show some trends in management of contaminated land. Almost all jurisdictions have in place or are building regulatory systems that recognize limited resources on the part of regulators. Most jurisdictions have taken steps to increase public accessibility of information related to land contamination, usually in the form of a separate site registry or through registration of notices in the applicable land registry system. Many jurisdictions have either adopted or are moving to facilitate use of risk management to deal with land contamination. Remediation of contaminated land is increasingly being tied to anticipated land use post-remediation.

Exemptions from liability are often tied to a lack of involvement in causing contamination or to the exercise of due diligence with respect to one's involvement with a site and contamination on that site. Every jurisdiction reviewed, except one, provides for retroactive application of its legislation and retroactive liability for contamination. There are not clear trends regarding the use of joint and several liability versus proportional liability, although most of the Canadian jurisdictions reviewed use a combination of the two approaches. The Canadian jurisdictions reviewed are beginning to incorporate the use of third party expert review and certification into their regulatory systems. The jurisdictions reviewed generally did not address the effect of changing remediation standards on liability or remediation obligations.

With respect to the non-Canadian jurisdictions reviewed, the American jurisdictions offer some interesting approaches through use of both positive and negative incentives. The United Kingdom and Netherlands both rely fairly heavily on risk management approaches. Much of the Netherlands approach is likely not practical for Alberta, given the Netherlands' aggressive agenda for site remediation and the extensive government involvement and funding that is required. The United Kingdom approach relies heavily on the involvement of municipalities, which again may not be practical in the Alberta context, given the range of capacities and resources available to Alberta municipalities.

A Review of Regulatory Approaches to Contaminated Site Management

1.0 Introduction

1.1 Project scope and terms of reference

The Environmental Law Centre was retained by Alberta Environment to carry out a review of regulatory approaches to contaminated land management, focusing on specified contaminated land issues of significance in Alberta. Relevant jurisdictions were identified through discussions between the Centre and Alberta Environment, with concentration on Canadian approaches and an overview of selected American and European jurisdictions. Alberta Environment also requested that the Centre canvass a number of stakeholders regarding their views of the most significant contaminated lands issues in Alberta.

The review includes an analysis and critique of the regulatory approaches, and concludes with recommendations regarding possible regulatory options for consideration by Alberta Environment. However, this review does not address common law remedies available in Alberta and other jurisdictions to deal with contaminated land, nor does it cover the wide range of contaminated lands that are dealt with on a voluntary basis wholly outside the regulatory system.

1.2 The Alberta context

Contaminated land management in Alberta is regulated under the *Environmental Protection and Enhancement Act* (EPEA), which has been in effect since 1993.[1] EPEA provides various regulatory tools that can be used to manage contaminated land, the most notable of which are environmental protection orders related to substance releases[2] and provisions related to the designation of contaminated sites.[3] The designation provisions are much more detailed, especially with respect to liability issues, but are also more cumbersome to administer, as they involve a detailed and lengthy process for moving from designation of contaminated sites to completion of site remediation. The substance release order is a more streamlined tool, with less related process and a narrower scope of liability and potentially responsible parties. It has proven simpler to administer.

Since EPEA's introduction in 1993, Alberta Environment has used the designation provisions very sparingly. Only five contaminated sites have been designated during that time, the most recent designation being in 1996. During the same time period, the Alberta courts have held that the substance release order may be used to deal with contamination that pre-dates EPEA.[4] As a result, Alberta Environment has made the substance release order its tool of choice in management of contaminated land. However, EPEA does not include clear criteria to guide the choice of regulatory tools, which creates uncertainty. Given this uncertainty, the matter of choice of tools has been litigated in Alberta a number of times[5], and litigation on this topic continues.[6]

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[1] The *Environmental Protection and Enhancement Act* was originally passed as S.A. 1992, c. E-13.3. The current version of the Act, which will be referred to in this report, is R.S.A. 2000, c. E-12.

[2] *Environmental Protection and Enhancement Act*, R.S.A. 2000, c. E-12, s. 113.

[3] *Ibid.*, Part 5, Division 2.

EPEA's substance release provisions are general in nature. Alberta Environment's policy approach is to make use of those provisions to deal with circumstances where parties responsible for contamination are immediately and readily identifiable. By comparison, Alberta Environment's view is that the designation provisions are intended to deal with extraordinary circumstances under a narrow set of facts, where contaminated land poses a significant adverse effect to human health or the environment. The designation provisions also provide a means of identifying responsible parties who are not immediately apparent and of allocating responsibility among those parties.

In October 2003, Alberta Environment established the Contaminated Sites Stakeholder Advisory Committee to review Alberta's contaminated land management legislation and make recommendations for improvements and revisions where necessary. This report will be provided to the Committee to assist it in its task.

1.3 Project approach

As mentioned above, this project involved various tasks. Contaminated land issues relevant to Alberta were identified for consideration in the review of other jurisdictions' regulatory approaches and Canadian, American and European jurisdictions were selected for review. A range of stakeholders was canvassed for their perspectives on contaminated land issues in Alberta. The tasks and approach are described in greater detail below.

1.3.1 Issues addressed

Alberta Environment identified issues of concern in the initial terms of reference for this project. These issues are:

- Brownfields and voluntary cleanup;
- Liability matters, including allocation and termination of liability;
- Retrospective application of contaminated land legislation and liability;

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[4] *Legal Oil and Gas Ltd. v. Alberta (Minister of Environment)* (2000) 34 C.E.L.R. (N.S.) 303 (Ab. Q.B.); *McColl-Frontenac Inc. v. Alberta (Minister of Environment)* 2003 ABQB 303; *Imperial Oil Limited v. Alberta (Minister of Environment)* 2003 ABQB 388.

[5] *Ibid.*

[6] *McColl-Frontenac, supra* note 4, and *Imperial Oil, supra* note 4, are currently being appealed to the Alberta Court of Appeal.

- Triggers (initiating circumstances or conditions) for the use of contaminated land legislation and regulatory tools; and

- Effects of changing remediation objectives on liability and remediation obligations.

The review of regulatory approaches in all jurisdictions covered in this project addressed these issues.

1.3.2 Jurisdictions reviewed

The primary focus of this project was on comparative review of Canadian jurisdictions, with a less detailed analysis of certain American and European jurisdictions. The review of Canadian jurisdictions was undertaken in two parts. The first part consisted of a review of all Canadian jurisdictions (federal, provincial and territorial) to determine whether each jurisdiction has contaminated land management legislation and to assess whether each jurisdiction has incorporated into its legislation contaminated site liability principles recommended by the Canadian Council of Ministers of the Environment (CCME) in 1993.[7] The second part involved a detailed review of contaminated land legislation and regulatory systems for selected Canadian jurisdictions: Alberta, British Columbia, Ontario and Quebec.

Review of the American and European jurisdictions was less detailed, intended to give an overview of regulatory approaches with respect to the contaminated land issues identified. The American jurisdictions reviewed for this project, Massachusetts, Michigan, California and Oklahoma, were selected to provide an overview of a variety of approaches. European jurisdictions reviewed were the United Kingdom and the Netherlands.

1.3.3 Stakeholder input

The project also involved canvassing stakeholders with respect to their views on contaminated land issues in Alberta. Stakeholder organizations that participated on Alberta multi-stakeholder advisory committees dealing with contaminated sites legislation and policy in the early 1990s were approached.[8] The Centre forwarded a short notice to the following organizations, posing the question "In your opinion, what are the three most significant contaminated land regulatory issues in Alberta?":

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[7] *Contaminated Site Liability Report: Recommended Principles for a Consistent Approach Across Canada* (Winnipeg: Canadian Council of Ministers of the Environment, 1993).

[8] The relevant 1990s advisory committees were the Contaminated Sites Liability Issues Task Force, which advised the Minister of Environment on the content of proposed contaminated sites legislation through its report *Final Report to Minister of the Environment* (Edmonton: Alberta Environment, 1992), and the Contaminated Sites Implementation Advisory Group, which advised the Minister of Environmental Protection on implementation of EPEA's designation of contaminated sites provisions through its report *Final Report to the Minister of Environmental Protection* (Edmonton: Alberta Environmental Protection, 1994).

- Alberta Association of Municipal Districts and Counties;
- Alberta Environmental Network Society;
- Alberta Real Estate Association;
- Alberta Urban Municipalities Association;
- Canadian Association of Petroleum Producers;
- Canadian Bankers Association;
- Canadian Bar Association;
- Canadian Chemical Producers Association;
- Canadian Petroleum Products Institute; and
- Institute of Chartered Accountants of Alberta.

Responses were received from four of the nine organizations contacted. Concerns were expressed about liability issues, including joint and several liability and long-term liability. Some stakeholders saw problems in relation to risk management of contaminated sites and expressed a need for a better regulatory system to incorporate risk management. Other issues identified were a lack of incentives to offset cleanup costs and the lack of an environmental site registry.

2.0 Canadian jurisdictions

As mentioned above, the review of Canadian jurisdictions has two parts. The first part is an overview of all jurisdictions to determine the existence of contaminated land management legislation and the application in such legislation of contaminated site liability principles recommended on a national basis in 1993. The second part is a detailed review of contaminated land legislation for Alberta, British Columbia, Ontario and Quebec, focusing on the issues specified earlier in this report.

2.1 Overview of all Canadian jurisdictions

This part of the review examined all Canadian jurisdictions: federal, provincial (British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador), and territorial (Yukon, Northwest Territories, Nunavut). All jurisdictions were found to have some form of environmental legislation that enables management of contaminated land, although a number of jurisdictions do so through provisions related to control of substance or contaminant releases into the environment, rather than provisions specifically directed to contaminated land. A list of relevant legislation in each jurisdiction is attached as Appendix A.

Each jurisdiction's legislation was also reviewed to determine whether contaminated site liability principles recommended by CCME had been incorporated. CCME's *Contaminated Site Liability Report* made thirteen recommendations on principles that could be incorporated into contaminated land management legislation across Canada to ensure a common approach to liability matters.[9] These principles are briefly described below and set out in greater detail in Appendix B.

- Principle 1: The "polluter pays" principle should be paramount in contaminated site policy and legislation.
- Principle 2: Contaminated site policy and legislation should incorporate the principle of "fairness".
- Principle 3: Contaminated site remediation processes should provide for openness, accessibility and participation.
- Principle 4: Contaminated site policy and legislation should provide for the principle of "beneficiary pays", to avoid unjust enrichment of any party.
- Principle 5: Governments should base contaminated site policy and legislation on sustainable development principles, integrating environmental, human health and economic concerns.
- Principle 6: There should be a broad net cast for the determination of possible responsible persons; however, there should be clear, but limited, statutory exemptions from liability for lenders and for receivers, receiver-managers, trustees and other fiduciaries.
- Principle 7: Contaminated site legislation should enable recovery of public funds spent on contaminated site remediation from those responsible for the sites. Government should provide for priority of its expenditure claims over all other claims in instances of receivership or bankruptcy.
- Principle 8: Contaminated site policy and legislation should facilitate the efficient cleanup of sites and fair allocation of liability and should promote the use of alternative dispute resolution procedures.
- Principle 9: Contaminated site policy and legislation should provide a list of factors to be used in allocating the liability of responsible persons depending upon involvement with a site. A suggested list of factors is set out in the CCME report.

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[9] *Supra* note 7.

- Principle 10: Alternative dispute resolution procedures should be provided as a means to resolve issues of liability for contaminated sites. A suggested process is set out in the CCME report.

- Principle 11: Governments should retain discretion to designate sites as contaminated sites, but for greater certainty, site designation policies should be developed providing for designation of contaminated sites based on risk to human health and extent of environmental risk. There should be public input into the designation process and public notice of designation.

- Principle 12: Certificates of compliance should be issued to responsible persons who satisfactorily complete remediation of contaminated sites, but these certificates should provide that responsible persons may be liable for future cleanup, should further contamination subsequently be discovered.

- Principle 13: Benchmarks should be developed for the remediation of contaminated sites, varying depending on the land use and location of particular contaminated sites. There should be public input in the development of these benchmarks.

Alberta, British Columbia, Manitoba, Nova Scotia and the Yukon have incorporated most or all of the CCME principles into their legislation related to contaminated land management. It is important to note that this report's review does not assess the extent to which these principles are given practical application in each of the jurisdictions, but rather determines the presence or absence of the principles in the relevant legislation. For example, in Alberta, many of the CCME principles are embodied in the designation of contaminated sites provisions of EPEA.

Ontario and Quebec occupy a middle ground, in that both jurisdictions have incorporated about half of the CCME principles into their legislation. All other jurisdictions have incorporated only a few of the principles into their legislation. A table identifying those CCME principles incorporated by each jurisdiction is attached as Appendix C.

2.2 Review of selected Canadian jurisdictions

This portion of the report provides a more detailed review of the regulatory systems for contaminated land management found in Alberta, British Columbia, Ontario and Quebec. In particular, the legislation and regulatory systems are assessed in relation to the issues specified for this project:

- Brownfields and voluntary cleanup;

- Liability matters, including allocation and termination of liability;

- Retrospective application of contaminated land legislation and liability;

- Triggers (initiating circumstances or conditions) for the use of contaminated land legislation and regulatory tools; and

- Effects of changing remediation objectives on liability and remediation obligations.

A summary of the regulatory systems for Alberta, British Columbia, Ontario and Quebec is attached as Appendix D.

2.2.1 Alberta

2.2.1.1 Statutory authority

As mentioned above, contaminated land management in Alberta is dealt with under the *Environmental Protection and Enhancement Act* (EPEA).[10] There are three different parts of EPEA that can be used to deal with contaminated or disturbed land: Part 5, Division 1, dealing with substance releases; Part 5, Division 2, dealing with designation of contaminated sites; and Part 6, dealing with conservation and reclamation.

Part 5, Division 1 contains provisions regulating the release of substances into the environment. These provisions include prohibitions against certain substance releases, reporting requirements, obligations to take remedial measures with respect to substance releases, and powers for the Director to issue orders to deal with substance releases. This division also provides for the issuance of remediation certificates. The language used in Part 5, Division 1 indicated its retrospective application to substance releases that predate EPEA.[11] Alberta case law also supports retrospective application of these provisions, although such application is to be determined on a case-by-case basis.[12] Recent amendments to EPEA clarify Part 5, Division 1 by explicitly providing that orders issued under that Part can apply retrospectively.[13]

Part 5, Division 2 provides for the designation of land as contaminated sites. This division sets out a process for designation of such sites, with opportunity for voluntary remediation and the ability to issue orders dealing with liability and remediation requirements where necessary. Section 123 explicitly provides that Part 5, Division 2 applies retrospectively.

Part 6 deals with the conservation and reclamation of "specified land". Specified land has a defined meaning for EPEA's purposes, geared primarily at industrial uses of property.[14] Historically, conservation and reclamation has focused on the conservation of soil layers disturbed by industrial activities and the restoration of the land surface upon completion of those activities. However, in recent years, Alberta Environment has begun to include requirements for remediation of subsurface contamination in accordance with Part 5 as part of the reclamation process. Part 6 establishes a duty to reclaim, provides for issuance of a reclamation certificate upon satisfactory completion of reclamation, and also provides for a range of orders that may be issued dealing with reclamation requirements. Similar to Part 5, Division 1, the language used in Part 6 implies retrospective application of the conservation and reclamation provisions.[15]

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[10] *Supra* note 2.

[11] See, for example, the wording of s.113(1) EPEA, *supra* note 2, which refers to when "a release of a substance into the environment may occur, is occurring or *has occurred*" (emphasis added).

[12] *Legal Oil and Gas, supra* note 4 at 312.

[13] *Environmental Protection and Enhancement Amendment Act, 2003*, S.A. 2003, c. 37, s.13(b), which adds subsection (4) to s. 113 EPEA, explicitly providing for retrospective application of substance release environmental protection orders.

[14] *Conservation and Reclamation Regulation*, Alta. Reg. 115/93, s. 1(t).

These regulatory tools will be discussed in greater detail later in this report. However, it is worthwhile to note here that Part 5, Division 1, dealing with substance releases, is the tool most commonly used by Alberta Environment to address contaminated land management.

2.2.1.2 Voluntary cleanup

Alberta Environment encourages voluntary action and cleanup agreements between responsible parties, aside from any regulatory action that may be taken under EPEA. Voluntary cleanup action is not directly addressed by provisions under Part 5, Division 1 (substance release) or Part 6 (conservation and reclamation). Both Parts include provisions that set out the duty to either remediate[16] or reclaim[17] without requiring the direct involvement of Alberta Environment in regulating the fulfillment of such duty.

Under Part 5, Division 2 (designation of contaminated sites), which is rarely used by Alberta Environment, section 128 specifically provides for agreements dealing with remedial action and apportionment of related costs. Such agreements can be made among responsible persons and can also involve the Director. Where the Director is not a party to this type of agreement, it must be approved by the Director to be valid. Compliance with an approved agreement shields the parties to the agreement from issuance of an environmental protection order dealing with any matter provided for in the agreement.

2.2.1.3 Brownfields

Alberta does not have legislative provisions specifically related to brownfields. In 2000, Alberta Municipal Affairs, which is responsible for administering the *Alberta Fire Code*, began a time-limited program geared at providing financial assistance for environmental remediation of underground petroleum tank sites. The program was created to mitigate potential hardships that may have arisen for some parties in relation to the introduction of more stringent underground storage tank requirements under the *Alberta Fire Code*. The program, which was originally scheduled to run until March 2002, provided funding to assist municipalities that had taken over orphaned former retail fuel sites and small retail fuel facility owners to carry out environmental site assessments and site remediation. Environmental site assessments were funded to a maximum of $10,000 per eligible site, with reimbursement of remediation costs to a maximum of $100,000 per eligible site. The intent of the program was to assist in returning properties to use consistent with their existing zoning.[18] No new applications have been taken under the program since March 2002, although the time for program participants to complete remediation has been extended to October 31, 2004.[19]

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[15] The definition of "specified land" in s. 134 EPEA, *supra* note 2, refers to land "in respect of which an activity is or *has been* carried on" (emphasis added).

[16] EPEA, *supra* note 2, s. 112.

[17] *Ibid.*, s. 137.

2.2.1.4 Liability standards

Generally, liability imposed under EPEA for contaminated lands is joint and several.[20] However, it is open to the Director to allocate liability for remediation of designated contaminated sites between responsible persons under Part 5, Division 2, although the Director is not obligated to do so.[21] A list of factors relevant to allocating liability under Part 5, Division 2 is set out in an Alberta Environment guideline; the factors address the role of the responsible person in relation to the site and the contamination, with particular attention to control and due diligence.[22]

EPEA provides guidance as to the persons who may be liable for the environmental condition of land, and seeks to cast a relatively broad net. Part 5, Division 1 makes reference to the "person responsible", a term which is defined to relate to ownership or control of substances, and can include successors, representatives, principals and agents of those persons.[23] Municipalities that take title to land under municipal tax recovery proceedings and persons who carry out investigations to determine the environmental condition of land are given limited exemptions from the scope of "person responsible".[24]

Part 5, Division 2 ties liability to the "person responsible for the contaminated site", which is somewhat similar in nature to the definition of "person responsible", but with a significantly broader scope. The term "person responsible for the contaminated site" can include persons responsible for the substance(s) present on a contaminated site, persons considered to have caused or contributed to the presence of a substance on a site, current and previous owners of a site, and successors, representatives, principals and agents of those persons.[25] As is the case under Part 5, Division 1, municipalities that take title to land under municipal tax recovery proceedings and persons who carry out investigations to determine the environmental condition of land are given limited exemptions from the scope of "person responsible for the contaminated site".[26] Policy guidance regarding limitations on liability is provided in the *Guideline for the Designation of Contaminated Sites under the Environmental Protection and Enhancement Act* (*Designation Guideline*). The guideline addresses possible limitations for environmental testing and investigations; receivers, receiver-managers and trustees in bankruptcy; fiduciaries; municipalities; manufacturers and suppliers of substances; and lenders.[27]

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[18] "Alberta Government Announces Remediation Program", online: Petroleum Tank Management Association of Alberta, <http://www.ptmaa.ab.ca/General_Information/What_s_New_/what_s_new_.html>, accessed 20 November 2001.

[19] "Time to Cleanup Contaminated Sites Extended", online: Petroleum Tank Management Association of Alberta, <http://www.ptmaa.ab.ca/ptmaa/General_Information/remed_program.html>, accessed 29 January 2004.

[20] EPEA, *supra* note 2, s. 240(1).

[21] *Ibid.*, s. 129(4)(b) and s. 240(2).

[22] *Guideline for the Designation of Contaminated Sites under the Environmental Protection and Enhancement Act* (Edmonton: Alberta Environment, 2000), ¶ 5.1.1 [hereinafter "*Designation Guideline*"].

[23] EPEA, *supra* note 2, s. 1(tt).

[24] *Ibid.*, s. 1(tt)(v) – (vi).

[25] *Ibid.*, s. 107(1)(c).

Under Part 6, liability rests with "operators", who are those who carried out activities on specified land, and successors, representatives, principals and agents of those persons.[28]

A person acting as an executor, administrator, receiver, receiver-manager or trustee is given a statutory limitation of liability with respect to environmental protection orders issued under EPEA. Where such a person is issued an order, their liability is limited to the value of the assets they are administering, unless they have caused or aggravated the situation that the order is directed at through gross negligence or wilful misconduct.[29] This limitation of liability will apply to orders issued under any of Part 5, Division 1, Part 5, Division 2 and Part 6.

EPEA also gives municipalities protection from civil actions in relation to the condition of property listed on a municipal tax arrears list. However, the protection does not apply if a municipality is entitled to possession of property or takes ownership of property under municipal tax recovery proceedings and either causes new or additional substance releases on the property or aggravates existing contamination on the property.[30]

EPEA deals with termination of liability for contaminated land in a very limited fashion. Provisions exist for the issuance of remediation certificates, which could be granted following remediation of substance releases.[31] Issuance of a remediation certificate would have the effect of preventing the issuance of any environmental protection order for the same release of the same substance after a prescribed date.[32] It appears that these certificates could be used to terminate liability under either Part 5, Division 1 or Part 5, Division 2, as both divisions relate to substance releases. However, regulations are required to enable the issuance of remediation certificates; to date, no such regulations have been made. Part 5, Division 2 does not provide any mechanism for the termination of liability.

Specific provision is made for the termination of liability under Part 6 through the issuance of a reclamation certificate following the satisfactory completion of conservation and reclamation.[33] An environmental protection order requiring further conservation and reclamation work after the issuance of a reclamation certificate cannot be issued after the date prescribed in the regulations.[34] Under the *Conservation and Reclamation Regulation*, this can range from an immediate end to liability for reclamation upon issuance of a reclamation certificate to termination of liability for reclamation 25 years after issuance of the certificate, depending on the nature of the activity to which the reclamation certificate relates.[35]

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[26] *Ibid.*, s. 107(1)(c)(vii) – (viii).

[27] *Designation Guideline*, *supra* note 22, ¶ 3.1.

[28] EPEA, *supra* note 2, s. 134(b).

[29] *Ibid.*, s. 240(3).

[30] *Ibid.*, s. 221.

[31] *Ibid.*, s. 117.

[32] *Ibid.*, s. 118.

[33] *Ibid.*, s. 138.

EPEA does not directly address issues of liability where remediation objectives change over time. Alberta Environment's ongoing policy has been to require compliance with the remediation objectives that are in place when remediation is done. There is no record or history of Alberta Environment requiring parties to alter completed remediation where an existing remediation standard has changed.

2.2.1.5 Regulatory tools

Under EPEA, tools available to deal with contaminated land include environmental protection orders and statutorily imposed duties to remediate or reclaim, which are backed up with regulatory offences.

Under Part 5, Division 1, the most significant and most commonly used tool is an environmental protection order issued under s. 113 to deal with substance releases. This order can be issued where the Director is of the opinion that a substance release into the environment is causing an adverse effect. The scope of the s. 113 order is such that it can be used to deal with past, current and future or anticipated substance releases and adverse effects.[36] However, these orders cannot address substance releases that are otherwise authorized by an approval or registration or under regulations, unless the adverse effect from the release was not reasonably foreseeable at the time the approval or registration was issued or the regulation was made.[37] Section 113 orders are directed to the person responsible for the substance; it should be noted that "substance", "release", "adverse effect" and "person responsible" are all defined quite broadly in EPEA. Under this order, the Director can require the person responsible to take any measures necessary, including investigation, remediation and monitoring activities.[38]

An emergency environmental protection order can also be issued under Part 5, Division 1, where an inspector, investigator or the Director is of the opinion that a substance release into the environment is causing an immediate and significant adverse effect. Similar to the order under section 113, an emergency order is issued to the person responsible for the substance and can be used to deal with past, current and future or anticipated substance releases and adverse effects. Under this order, the person responsible may be directed to carry out any emergency measures considered necessary.

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[34] *Ibid.*, s. 142(3).
[35] *Supra* note 14, s. 15.
[36] *Supra* note 2, s. 113(1).
[37] *Ibid.*, s. 113(2).
[38] *Ibid.*, s. 113(3).

An emergency order can be issued regardless of whether a substance release is otherwise authorized by an approval or registration or under regulations.[39]

Section 112 imposes a statutory duty on a person responsible for a released substance to take remedial measures and restore the environment. The duty arises where a substance release into the environment is causing an adverse effect, and is applicable as soon as the person responsible becomes aware or ought to have become aware of the release. Similar to the orders under Part 5, Division 1, this statutory duty applies to deal with past, current and future or anticipated adverse effects. Failure to comply with this statutory duty is an offence, punishable by fine.[40]

Under Part 5, Division 2, where responsible parties cannot reach an agreement, the primary tool for dealing with contaminated land is an environmental protection order issued under s.129. However, Alberta Environment has never used this tool because all instances of designation have been resolved on a voluntary basis. In order to issue a s. 129 order, the Director must first have designated a contaminated site.[41] Alberta Environment's policy is to apply Part 5, Division 2 in extraordinary circumstances, where significant adverse effect exists.

The Director may designate a contaminated site where a substance present in the environment is causing, has caused or may cause a significant adverse effect. Significant adverse effect is not specifically defined in EPEA, nor is it tied to any form of numerical standards or criteria for substance levels. The *Designation Guideline* indicates that "(a)adverse effect can become significant when there is an actual or high probability of impact which has or could have a severe consequence on human health, safety or the environment".[42] Designation may occur regardless of any previous authorizations or remedies applied to the site, or compliance with any legislation.[43] There is opportunity for persons affected by the designation to provide input to Alberta Environment on the designation and remedial measures that should be taken,[44] and any directly affected person can appeal the designation to the Environmental Appeal Board.[45]

Once a contaminated site has been designated, the Director may issue an environmental protection order under s. 129 to a person responsible for the contaminated site. Alberta Environment intends that these orders will be issued if parties have not reached an agreement on remediation and allocation of related costs.[46] An order under s. 129 can require any measures necessary to restore the site and the environment, apportion costs for work required under the order among the responsible persons, and regulate or prohibit the use of the site or any product coming from the site. There is an extensive list of criteria to be considered by the Director in determining the persons responsible to whom to issue an order; the criteria are generally directed at a person's role and relationship to the site, with focus on involvement and actions related to the contamination.[47] Orders issued under s. 129 may be appealed to the Environmental Appeal Board by any person to whom the order is directed and any person who is directly affected by the designation of the contaminated site.[48]

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[39] *Ibid.*, s. 114.
[40] *Ibid.*, ss. 227(j) and 228(2).
[41] *Ibid.*, s. 129(1).
[42] *Supra* note 22, ¶ 1.1.
[43] *Supra* note 2, s. 125(2).
[44] *Ibid.*, s. 127.
[45] *Ibid.*, s. 91(1)(m).
[46] *Supra* note 22, ¶ 6.

Part 5, Division 2 also provides for voluntary agreements regarding remediation and cost apportionment; these agreements are discussed in greater detail above at 2.2.1.2.

Part 6 of EPEA provides for a range of environmental protection orders that can be issued to require conservation and reclamation of specified land. An inspector can issue an order to an operator before a reclamation certificate is issued, or at any time if a reclamation certificate is not required, where the inspector is of the opinion that the performance or suspension of work is necessary to conserve and reclaim specified land. This type of order is subject to any applicable approval and the regulations.[49] An inspector can also issue an order to an operator requiring conservation and reclamation in accordance with the regulations, where the inspector is of the opinion that the operator did anything that caused an adverse effect in a location away from the specified land or caused a substance to leave from the specified land.[50]

After the issuance of a reclamation certificate and a subsequent inspection of the specified land, if the Director is of the opinion that further conservation and reclamation work is required related to matters that were not apparent at the time the reclamation certificate was issued, the Director may issue an environmental protection order requiring such work to be done. This type of order may be directed to the person who obtained the reclamation certificate or successors, representatives, principals and agents of that person, but cannot be issued after the time prescribed in the regulations, which can range up to 25 years after issuance of the reclamation certificate, depending on the nature of activity to which the reclamation certificate applies.[51]

Under Part 6, inspectors are also able to issue emergency environmental protection orders where of the opinion that an immediate and significant adverse effect may occur, is occurring or has occurred on specified land as a result of an activity on that land. These orders are issued to the operator and direct the suspension of any work on the specified land.[52]

Section 137 imposes a statutory duty on an operator to conserve and reclaim specified land and obtain a reclamation certificate. This duty does not have a time period or specific triggering event tied to it, although an inspector can direct an operator to undertake conservation and reclamation work. Failure to comply with this statutory duty is an offence, punishable by fine.[53]

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[47] *Supra* note 2, s. 129(2).

[48] *Ibid.*, s. 91(1)(g).

[49] *Ibid.*, s. 140.

[50] *Ibid.*, s. 141.

[51] *Ibid.*, s. 142.

[52] *Ibid.*, s. 143.

All of the environmental protection orders under Part 5, Division 1 and Part 6, other than the emergency environmental protection order under s. 114, may be appealed to the Environmental Appeal Board by the person to whom the order is directed.[54]

2.2.2 British Columbia

2.2.2.1 Statutory authority

British Columbia's legislation and regulatory system for contaminated land management is in a state of transition. In October 2003, the *Environmental Management Act* (EMA) was passed and given royal assent.[55] This Act deals with contaminated land management, replacing the *Waste Management Act*.[56] It is anticipated that EMA will be proclaimed in the spring of 2004.[57] Amendments to EMA are planned for the spring 2004 legislative session, focusing on streamlining the definition of contaminated site and certain processes for managing contaminated sites and enabling the creation of a brownfield fund.[58] Further EMA amendments are planned in future years, directed at liability and alternative dispute resolution provisions.[59] This report will focus on EMA as passed in October 2003.

Part 4 EMA deals with contaminated site remediation. This part establishes processes for identifying and designating contaminated sites, provides for public access to contaminated sites information, and sets out liability provisions and remediation requirements. Details of British Columbia's contaminated land management system are set out in the *Contaminated Sites Regulation* (the Regulation),[60] which was originally created under the *Waste Management Act*. The Regulation will be continued as a regulation under EMA and will be subject to consequential amendments to ensure consistency with that Act.[61]

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[53] *Ibid.*, ss. 227(j) and 228(2).
[54] *Ibid.*, s.91(1)(f) and (h).
[55] S.B.C. 2003, c. 53 (not yet in force).
[56] *Waste Management Act*, R.S.B.C. 1996, c. 482.
[57] "*Waste Management Act* Review and the *Environmental Management Act*", online: British Columbia Ministry of Water, Land and Air Protection, <http://wlapwww.gov.bc.ca/epd/waste_mgt_review/index.html>, accessed 26 January 2004.
[58] "Contaminated Sites Review", online: British Columbia Ministry of Water, Land and Air Protection, <http://wlapwww.gov.bc.ca/epd/waste_mgt_review/pdf_files/webupdateCS1.pdf>, accessed 26 January 2004.
[59] Telephone conversation with Mike Macfarlane, Manager, Contaminated Sites Review, British Columbia Ministry of Water, Land and Air Protection, 27 January 2004.
[60] B.C. Reg. 375/96.
[61] *Supra* note 59.

EMA explicitly provides for retroactive application of liability for contaminated sites.[62] The definition of "contaminated site" does not have a temporal element, but is tied to presence of prescribed substances at levels exceeding prescribed criteria or standards.[63]

2.2.2.2 Voluntary cleanup

Part 4 EMA allows for voluntary remediation of contaminated land. Voluntary remediation agreements can be entered into between the director and responsible persons, upon the request of the responsible person. An applicant must provide the names of other possible responsible persons as part of the application; those persons will be given notice of the application and provided with an opportunity to review and make submissions regarding the proposed agreement.[64] These agreements are to include provisions regarding financial or other contributions by the responsible person; certification by the responsible person of full and accurate disclosure of all information held by them regarding site conditions and activities on the site; any security requirements imposed by the director; a schedule for remediation; and any other requirements that may be necessary to achieve remediation.[65] If a responsible person can demonstrate that there is no immediate and significant threat or risk to human health or the environment, it is open to the director to provide in the agreement that the commencement of remediation can be delayed for a specified time period.[66]

Performance of a voluntary remediation agreement has certain effects on liability. All responsible persons who are parties to the agreement are discharged from further liability. Any responsible persons who did not participate in the agreement are not discharged from liability, although their total potential liability is reduced by any amount that is specified in the agreement. The agreement does not affect rights of any person to remedies and relief available under other legislation or at common law, and it does not prevent the director from entering into other voluntary remediation agreements in relation to the same contaminated site.[67]

EMA also provides for independent remediation, which can be carried out by a responsible person regardless of whether a contaminated site has been determined, a remediation order issued or a voluntary remediation agreement entered into. The responsible person must give written notice to the director when beginning remediation and within 90 days of completion of remediation. During remediation, the director can inspect and monitor the activities for compliance with the regulations, order public consultation and review, issue a remediation order or impose any requirements necessary to achieve remediation. A responsible person carrying out independent remediation can provide the necessary information, and request a review and issuance of an approval in principle, which relates to the remediation plan, or a certificate of compliance, which relates to completed remediation.[68]

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[62] *Supra* note 55, s. 47(1).
[63] *Ibid.*, s. 39(1).
[64] *Supra* note 60, s. 39.
[65] *Supra* note 55, s. 51(1).
[66] *Ibid.*, s. 51(3).
[67] *Ibid.*, s. 51(2).

Approvals in principle relate to remediation plans and can be issued by the director following application by a responsible person and review of the proposed plan. The director can include conditions regarding plan implementation in the approval.[69] An approval in principle can be issued for part of a contaminated site,[70] and can be withheld or rescinded if the responsible person does not comply with it or owes fees to the government.[71]

2.2.2.3 Brownfields

Various EMA provisions support brownfield development. One of the more detailed is the requirement for preparation and submission of a site profile.[72] Site profiles must be prepared in a wide range of situations:

- Where applications are submitted for land use planning authorizations, such as subdivision, rezoning, etc., and the land had been used for industrial or commercial purposes, the applicant must submit a site profile to the official or agency dealing with the application.

- Where a property is used for an activity specified in the regulations, the owner must submit a site profile to the director. A trustee, receiver, liquidator or other representative who takes possession or control of property on behalf of creditors must also submit a site profile to the director if the property is used for a purpose, use or activity prescribed in the regulations.

- Where property offered for sale was used for a purpose or activity prescribed in the regulations, the vendor must provide a site profile to every prospective purchaser and to the director.

- The director may order the preparation and submission of a site profile by an owner or occupant of land that may be a contaminated site due to its past or current land use or if a person required under the Act to provide a profile fails to provide a satisfactorily completed profile.

The site profile is prepared in a format specified by the regulations, and provides information regarding site conditions.[73] The Regulation lists the activities that trigger the requirement to provide a site profile.[74] Where the profile is provided to land use planning authorities, those authorities must assess the profile and if merited, forward it to the director to determine whether a site investigation is needed.[75] In all instances where the director receives a site profile, a decision must be made whether to require a site investigation.[76]

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[68] *Ibid.*, s. 54.
[69] *Ibid.*, s. 53(1).
[70] *Ibid.*, s. 53(4).
[71] *Ibid.*, s. 53(5).
[72] *Ibid.*, s. 40.
[73] *Supra* note 60, Schedule 1.
[74] *Ibid.*, Schedule 2.

Consequential amendments under EMA to various other Acts prevent municipalities and other approving authorities from approving specified applications in relation to sites where a site profile is required under EMA, unless the approving authority has received any of a number of specified notices from the director regarding the site. The types of applications affected by this requirement include zoning and rezoning; development permits and variances; soil removal; subdivision; demolition permits for structures used for industrial or commercial purposes; and certificates of restoration for oil and gas wells, test holes or production facilities.[77]

Section 43 EMA requires that the Minister establish a publicly accessible site registry. A broad range of information is to be included in the registry; generally it includes documents generated by the operation of specified provisions of Part 4 EMA. The director may also require historical information, including that related to discharges to land, to be entered into the site registry.[78]

As mentioned above, planned amendments to EMA in the spring of 2004 will enable the establishment of a "Land Remediation Fund" to deal with brownfield assessment, remediation and redevelopment.[79]

2.2.2.4 Liability standards

EMA deals extensively with liability matters. Liability for responsible persons is retroactive and joint and several for "reasonably incurred" costs of remediation, which include not only remediation costs but also the costs of site profiles and investigations, legal and consultant costs related to seeking contribution from other responsible persons, and government fees. Although liability is stated to be joint and several, EMA enables the apportionment of liability by the courts or by the director under a remediation order. However, such apportionment may only occur if the available evidence justifies it.[80] Liability will apply even if the release of substances that caused a contaminated site was not prohibited by any legislation and despite any statutory authorization allowing discharge of waste into the environment.[81]

Any person, including a responsible person or the director, who has incurred costs for the remediation of a contaminated site can bring a court action to recover those "reasonably incurred" costs from responsible persons. Any site that is the subject of such an action must be determined or otherwise qualify as a contaminated site under EMA before the court can hear the action.[82]

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[75] *Supra* note 55, s. 40(4).
[76] *Supra* note 60, s. 7.
[77] *Supra* note 55, ss. 155, 156, 162, 168 and 173.
[78] *Supra* note 60, s. 8(4).
[79] *Supra* note 58.
[80] *Supra* note 60, s. 34(2).
[81] *Supra* note 55, s. 47.

Section 45 sets out those persons who are persons responsible for the remediation of contaminated sites. They include:

- Current and previous owners and operators of a contaminated site.
- Persons who produced a substance and caused that substance to be dealt with in a manner that caused a contaminated site.
- Persons who transported or arranged transport of a substance and caused that substance to be dealt with in a manner that caused a contaminated site.

Each of these three categories also applies to sites contaminated by migration of a substance, if the persons are related or linked to the site from which the contaminating substance migrated.

Secured creditors can be responsible persons if they take ownership of land at a contaminated site or exercise control or impose requirements dealing with substances and such substances cause the contaminated site. However, a secured creditor will not be a responsible person if it acts primarily to protect its security interest; s. 45(4) EMA provides various examples of such actions. The Regulation may also designate classes of persons who are responsible for remediation.

Section 46 provides an extensive list of persons who are not responsible for remediation of contaminated sites. Generally, this list is geared at persons who had no control or participation in relation to the contamination or who exercised due diligence in their activities or their relationship to the site. Further clarification regarding persons who are not responsible for remediation is provided in the Regulation; again, these provisions are focused on an absence of control with respect to contamination. The exemptions set out in the Regulation usually are not applicable in instances of intentional damage, gross negligence or wilful misconduct.[83] The exemptions from liability provided in s. 46 EMA and the Regulation do not apply automatically; a person seeking to rely on an exemption is obliged to prove all elements of the claimed exemption on the balance of probabilities.[84]

In an attempt to mitigate potential hardship that might be caused by joint and several liability, EMA provides that a responsible person may seek minor contributor status. To qualify, the responsible person must show that only a minor portion of the contamination is attributable to them; no remediation is required with respect to their portion of the contamination or the cost of their portion of the remediation would be a minor portion of the total remediation cost; and the application of joint and several liability to them would be "unduly harsh" in all circumstances. Where the director grants minor contributor status, the responsible person's liability is limited to the amount or portion specified by the director.[85]

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[82] *Ibid.*, ss. 47(5) – (9).

[83] *Supra* note 60, ss. 19 – 33. Classes or persons dealt with in the exemptions under the Regulation include: transporters and arrangers; sureties; insurers and insurance brokers; certain owners; construction of contaminated sites; secured creditors and their representatives; fiduciaries; lessors; and municipalities.

[84] *Supra* note 55, s. 46(3).

To facilitate determination of liability, s. 49 provides for allocation panels. The Minister appoints allocation advisors; such advisors are appointed by the director to three-member panels to provide opinions on responsible person status, minor contributor status, and allocation of responsibility for contamination and liability for related remediation costs. A list of criteria for consideration by the panel is set out in EMA; these criteria are generally liability allocation factors. Any person can request the appointment of an allocation panel, and must pay the panel's costs. The director may require a responsible person to obtain an allocation panel opinion as a condition of entering into a voluntary remediation agreement. Ultimately, the director may consider an allocation panel opinion but is not bound by it.[86]

As mentioned above in 2.2.2.2, performance of a voluntary remediation agreement discharges responsible persons who participated in the agreement from further liability. While such an agreement does not provide any discharge of liability for responsible persons who did not participate in the agreement, the total potential liability of those persons is reduced by the amount specified in the agreement.[87]

There does not appear to be long-term protection from future liability provided in EMA. Section 60 allows the government to take future action on a contaminated site, even where there has been past remediation, if:

- Additional information regarding liability becomes available, particularly where it would affect minor contributor status of a responsible person;

- Activities on the site may change the land condition or use;

- Information becomes available about the site or contaminating substances at the site that suggests that the site poses a threat to human health or the environment. It is arguable that this condition could be interpreted to create liability in instances where remediation standards change;

- A responsible person fails to exercise due diligence with respect to contamination on the site; or

- A responsible person directly or indirectly contributes to contamination at the site after action has previously been taken.

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[85] *Ibid.*, s. 50.
[86] *Ibid.*, s. 49.
[87] *Ibid.*, s. 51.

2.2.2.5 Regulatory tools

There are various regulatory tools available to the province under EMA for contaminated land management. These include requirements to submit specified information, a number of orders, and the ability of the government to take action and recover costs.

Requirements for a number of persons to prepare and submit site profiles are discussed in detail above at 2.2.2.3. In addition to the persons specified, the director may require the owner or occupier of land that may be a contaminated site to prepare and submit a site profile.[88]

Generally, the submission of a site profile will lead to a determination by the director regarding the need to prepare a site investigation, although the director is able to order a site investigation without consideration of a site profile. The director can order the owner or operator of a site to carry out a preliminary or detailed site investigation where the director believes the site may be a contaminated site or contains substances that could cause adverse effects on human health or the environment.[89] The Regulation explains the distinction between a preliminary and a detailed site investigation. A preliminary site investigation is made up of two stages; the first stage requirements are similar to a Phase 1 environmental site assessment, while the second stage requirements parallel a Phase 2 environmental site assessment.[90] Where a detailed site investigation is required, a preliminary site investigation must be carried out first. The detailed site investigation must provide the necessary information to conduct a risk assessment, if applicable, and develop a remediation plan, similar to a Phase 3 environmental site assessment.[91] Neither EMA nor the Regulation provides any criteria indicating when a preliminary site investigation will be required as compared to a detailed site investigation.

A contaminated site is an area where soil, water, groundwater or sediment contains hazardous waste or another prescribed substance exceeding prescribed criteria or standards;[92] the Regulation ties determination of contaminated sites to numerical standards.[93]

Section 44 EMA sets out a process for determination of a contaminated site by the director. The director makes a preliminary determination based on available information, which can include a site profile or site investigation. Written notice of the preliminary determination must be given to a range of parties specified in section 44, and opportunity must be provided for any person to comment on the determination. Following these steps, the director may make the final determination of a contaminated site and provide written notice of that determination to all parties given notice of the preliminary determination and any person who commented on the preliminary determination. The final determination can be appealed to the Environmental Appeal Board. This process can be bypassed to the point of final determination of a contaminated site by request of any person, if the person provides sufficient information to determine that the property is a contaminated site and agrees to be a responsible person for the contaminated site.

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[88] *Ibid.*, s. 40(8).
[89] *Ibid.*, s. 41.
[90] *Supra* note 60, s. 58.
[91] *Ibid.*, s. 59.
[92] *Supra* note 55, s. 39(1).
[93] *Supra* note 60, ss. 11 – 12.

A site can be considered a contaminated site without application of the determination process in any of the following circumstances:

- Appointment of an allocation panel under s. 49;
- Determination of minor contributor status under s. 50;
- Entry into a voluntary remediation agreement under s. 51;
- Approval in principle for a remediation plan under s. 53(1); or
- Issuance of a certificate of compliance under s. 53(3).

The director can issue a remediation order to any responsible person, requiring them to carry out remediation, contribute to remediation costs incurred by another, or provide security. In deciding whether to require a responsible person to carry out remediation in an order, the director must consider criteria related to actual or likely adverse effects and the likelihood that responsible persons or others will not act in a satisfactory or timely fashion to carry out remediation. The director must take private agreements between responsible persons regarding liability into account when deciding which persons to require to remediate or contribute to remediation costs and name the persons who contributed most substantially to the site becoming contaminated.[94] The director must give written notice of a remediation order to every person with an interest registered against the title to the contaminated site affected by the order.[95]

Where a person is issued a remediation order or given notice of such order, they are prohibited, without the director's consent, from knowingly diminishing or reducing assets that could be used to satisfy the remediation order. If assets are diminished or reduced, the director can bring an action to recover the amount of the diminishment or reduction.[96] The Regulation provides clarification regarding actions, generally normal financial transactions, that are not considered diminishment or reduction of assets.[97]

The director can also order a responsible person to provide for public consultation on proposed remediation of a contaminated site or public review of remediation activities, with costs to be borne by the responsible person.[98]

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[94] *Supra* note 55, s. 48.
[95] *Ibid.*, s. 48(13).
[96] *Ibid.*, s. 48(8).
[97] *Supra* note 60, s. 37.
[98] *Supra* note 55, s. 52.

Section 56 requires a person carrying out remediation to give preference to remediation alternatives that provide permanent solutions to the maximum extent practicable. In determining a remediation approach, a person must take into account the potential adverse effect, the feasibility of alternative remediation options, and the costs and potential economic benefits. Additionally, the director must consider whether permanent solutions have been given preference when issuing an approval in principle or a certificate of compliance.

Certificates of compliance can be issued by the director with respect to completed remediation. For a certificate to be issued, the following requirements must be met:

- The contaminated site must have been remediated in accordance with prescribed standards, any orders or approved remediation plans and any requirements imposed by the director.
- Information about the remediation and any substances remaining on the site must have been recorded in the site registry.
- A plan must be in place to monitor substances remaining on the site and the necessary works must be installed.
- Any required security must have been provided.
- If required by the director, the responsible person must provide proof of registration of a restrictive covenant under the *Land Title Act*.[99]

A certificate of compliance can be issued for part of a contaminated site, and can be withheld or rescinded if the responsible person is not in compliance with the certificate or owes fees to the province.[100]

The director can determine an orphan site and if such a site is high risk.[101] A contaminated site can be determined an orphan site if a responsible person cannot be found or is not willing or financially able to carry out remediation within a specified time period, or where a government body has taken ownership of a site following failure of the former site owner or other responsible person to carry out remediation.[102] Determination of an orphan site is significant because the provincial government can undertake remediation of high-risk orphan sites and orphan sites that are not being adequately remediated and require government action to protect human health or the environment, and recover costs of that remediation.[103] Cost recovery measures include sale of all or part of the contaminated site, court action, attachment of funds from any sale involving the contaminated site, and registration of a lien against title to the contaminated site.[104] When remediating an orphan site, the government can issue an order to any person to provide labour, services or equipment or to allow land use for remediation purposes.[105]

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[99] *Ibid.*, s. 53(3).
[100] *Ibid.*, s. 53(4) – (5).
[101] *Ibid.*, s. 58(1).
[102] *Supra* note 60, s. 61.
[103] *Supra* note 55, s. 58.

EMA creates various offences in relation to requirements under Part 4. These include failure to submit a site profile; failure to carry out a site investigation; failure to comply with a remediation order or conditions related to a voluntary remediation agreement or independent remediation; and failure to notify the director of commencement or completion of independent remediation. These offences carry a maximum penalty of a $200,000 fine, 6 months imprisonment, or both.[106]

Remediation may also be required under EMA by means of a pollution abatement order. This order is issued where a substance is causing pollution, and can be directed to the person who had control of the substance when it entered the environment, the owner or occupier of land on which the substance was located immediately before it entered the environment, and the person who caused or authorized the pollution. A pollution abatement order can require investigation and remediation of the pollution and can be issued even if the substance release was not prohibited or was authorized under EMA.[107]

2.2.3 Ontario

2.2.3.1 Statutory authority

In Ontario, contaminated land management is achieved primarily under the provisions of the *Environmental Protection Act* (EPA).[108] Some relevant provisions are found in other Acts that were amended by the *Brownfields Statute Law Amendment Act, 2001* (Brownfields Act),[109] including the *Municipal Act*,[110] *Municipal Tax Sales Act*,[111] *Ontario Water Resources Act*,[112] *Pesticides Act*,[113] and *Planning Act*.[114] This report also refers to the *Brownfields Draft Regulation*,[115] which provides guidance with respect to Part XV.1 EPA. It should be noted that Part XV.1 EPA, which creates the Environmental Site Registry and provides for records of site condition and certificates of property use, has not yet been brought into force.

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[104] *Ibid.*, s. 59.
[105] *Ibid.*, s. 58(3).
[106] *Ibid.*, s. 120(17).
[107] *Ibid.*, s. 83.
[108] R.S.O. 1990, c. E.19.
[109] S.O. 2001, c. 17.
[110] R.S.O. 1990, c. M.45.
[111] R.S.O. 1990, c. M.60.
[112] R.S.O. 1990, c. O.40.
[113] R.S.O. 1990, c. P.11.
[114] R.S.O. 1990, c. P.13.
[115] *Brownfields Draft Regulation – Records of Site Condition – Part XV.1 of the Act*, EBR Registry Number RA03E0002, online: <http://www.ene.gov.on.ca/envision/env_reg/er/documents/2003/RA03E0002-regulation.pdf> (posted 28 February 2003) [hereinafter Brownfields Draft Regulation].

Generally, the relevant EPA provisions are intended to apply retrospectively. Several of the orders that may be issued to deal with contaminated land matters can impose liability retrospectively,[116] and the liability limitations and exemptions under Part XV.2 also apply retrospectively.

2.2.3.2 Voluntary cleanup

While there are no legislative provisions providing specifically for voluntary cleanup of contaminated land, some of the incentives and financial provisions, discussed in greater detail below in 2.2.3.3, will likely assist in stimulating voluntary action.

2.2.3.3 Brownfields

With the enactment of the *Brownfields Act*, a variety of regulatory provisions were put in place to support brownfield development. This includes the Environmental Site Registry, a publicly accessible registry in which records of site condition for properties will be filed.[117] However, the registry will not be an exhaustive record of the environmental condition of Ontario properties; it will be required to contain a notice warning users to consider carrying out their own due diligence in relation to the environmental condition of property, in addition to reviewing the registry information.[118] In addition, the Ministry is required to maintain index records of the names of all persons issued orders under EPA, the *Ontario Water Resources Act* and *Pesticides Act*.[119]

A property owner can file a record of site condition, once the following conditions have been met:

- A qualified person has certified that phase one and phase two environmental site assessments have been carried out for the property.
- The property meets the site condition standards prescribed by the regulations.
- Substances on the property excepted from the prescribed standards meet the risk assessment standards accepted by the Director.
- The record of site condition contains all required information. A list of required information is set out in EPA and is focused on providing a complete record of the environmental condition of the property.[120]

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[116] See ss. 7, 8, 18 and 43 EPA, *supra* note 108.

[117] *Supra* note 108, s. 168.3 (not yet in force).

[118] *Supra* note 115, s. 8.

[119] *Supra* note 108, s. 19(9), note 112, s. 13 and note 113, s. 31(8).

[120] *Ibid.*, s. 168.4 (not yet in force).

Filing of a record of site condition will provide liability protection for various parties connected to the property (discussed in greater detail below in 2.2.3.4) and will be required for certain changes in property use. Anticipated changes in property use that will require prior filing of a record of site condition include:

- Change from industrial or commercial use to residential or parkland use.[121]
- Change from a commercial use more likely to result in contamination, being a garage, a bulk liquid dispensing facility (including gas stations) and a dry cleaning operation with the dry cleaning equipment on site, to a more sensitive land use (residential, institutional, parkland or agricultural).[122]

These regulated changes in property use must be consistent with the property use specified in the record of site condition, otherwise such changes will not be allowed.[123] Transition provisions in EPA will enable the filing in the registry of a record of site condition submitted to the Ministry of Environment under the *Guideline for Use at Contaminated Sites in Ontario* (*Guideline*) prior to Part XV.1 EPA coming into force.[124] However, an older record of site condition will not be allowed to be filed in the registry if no phase two environmental site assessment was carried out under the *Guideline* and the property was used for industrial use or as a garage, bulk liquid dispensing facility, gas station or dry cleaning operation with the dry cleaning equipment on site, at any time before that record was submitted to the Ministry.[125]

Where contamination on a property has been dealt with through risk assessment, the property owner can submit the risk assessment to the Director for review. The Director must given written notice of whether the risk assessment has been accepted.[126] Where a risk assessment has been accepted, the Director may issue a certificate of property use, which can require the property owner to take actions to prevent adverse effects or to refrain from any property use or construction specified in the certificate.[127] Certificates of property use are discussed in greater detail in 2.2.3.5 below.

The *Brownfields Act* created financial incentives to support brownfield development. The *Municipal Act* enables the passing of municipal bylaws providing for tax assistance for eligible properties through the cancellation of all or a percentage of municipal and school taxes or a freeze on those taxes for specified periods.[128] Amendments to the *Planning Act* allow environmental matters to be dealt with in community improvement plans. This change enables municipalities to make grants or loans to owners and tenants of lands and buildings within the community project area to pay costs of rehabilitation in accordance with a community improvement plan.[129] The total cost of these grants or loans and tax assistance provided under the *Municipal Act* cannot exceed the cost of rehabilitating the lands and buildings.[130]

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[121] *Ibid.*, s. 168.3.1 (not yet in force).
[122] *Supra* note 115, s. 11.
[123] *Supra* note 108, s. 168.3.1 (not yet in force).
[124] *Ibid.*, s. 168.4(6) – (7) (not yet in force). It is expected that the *Guideline for Use at Contaminated Sites in Ontario* (Toronto: Ontario Ministry of Environment, 1996) will be superseded by the *Brownfields Draft Regulation, supra* note 115, when it is enacted.
[125] *Supra* note 115, s. 15.
[126] *Supra* note 108, s. 168.5 (not yet in force).
[127] *Ibid.*, s. 168.6 (not yet in force).
[128] *Supra* note 110, s. 442.7.

The *Municipal Tax Sales Act* was amended to enable municipalities to inspect properties subject to municipal tax sale without attracting liability, to assist the municipalities in determining whether to acquire such properties. A municipality is allowed 12 months following an unsuccessful public sale of a property to carry out necessary inspections.[131]

2.2.3.4 Liability standards

There are a number of orders that can be issued under EPA to deal with contamination. While the triggers and scope of these orders will be discussed in greater detail in 2.2.3.5 below, they generally seek to impose liability on current and previous owners, occupiers and those with control of a source of a contaminant, or those who have control over contaminants, pollutants and discharges.[132] EPA provisions do not specifically address whether liability is addressed on a joint and several or allocated basis. However, legal commentary indicates that the Ministry's preferred approach is the use of joint and several liability.[133]

Part XV.2 EPA provides protection to specified parties against the issuance of various orders that can be used to deal with contamination.[134] This protection is not extended to owners of properties or substances, or to parties that are in contravention of EPA or the regulations. Otherwise, this part specifies that certain actions do not qualify municipalities (dealing with non-municipal property), secured creditors and persons investigating property to receive orders under specified EPA provisions.[135] Actions that are permitted and do not attract liability for the specified orders include:

- Any property investigation related to contaminants on that property.
- Any action to preserve or protect property from contaminants.
- Any action responding to danger to health or safety of any person, impairment of the quality of the natural environment, or injury or damage to any property or plant or animal life, as a result of contaminants on property.
- Any other action prescribed by regulations.[136]

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[129] *Supra* note 114, s. 28(7).
[130] *Ibid.*, s. 28(7.1).
[131] *Supra* note 111, ss. 17.1 – 17.5.
[132] See ss. 7, 8, 12, 17, 18, 43, 97, 157 and 157.1 EPA, *supra* note 108.
[133] David Estrin, *Business Guide to Environmental Law* (Scarborough, ON: Thomson Carswell, 1992) at 1-19.
[134] For a list of the relevant orders, see *supra* note 132.
[135] *Ibid.*, s. 168.12 (municipalities), 168.17 (secured creditors) and 168.26 (persons investigating property).
[136] *Ibid.*

In addition, municipalities can take action on non-municipal property only to collect rent or other debts through distress proceedings or act under specified legislation without attracting liability for the specified orders.[137]

Where a municipality becomes a property owner under tax recovery provisions of the *Municipal Act, 2001* or a secured creditor takes ownership of property under a foreclosure, those parties and their representatives are exempt from being issued any order under EPA for a period of five years from when they take title to the property, unless such an order arises due to the gross negligence or wilful misconduct of any of those parties. The Director can extend this time period.[138] However, this exemption does not apply to a municipality if it is issued an order under s. 97(1) EPA dealing with spills.[139]

Receivers, trustees in bankruptcy and their representatives are also protected from being issued any order under EPA, unless such an order arises due to the gross negligence or wilful misconduct of any of these parties.[140] This exemption does not have a time limitation.

If fiduciaries and their representatives are issued any order under EPA affecting fiduciary property, they are only required to incur costs for compliance to a limit of the value of the assets held and administered when served with the order, less the reasonable costs of holding and administering those assets. This limitation does not apply if the order arises due to the gross negligence or wilful misconduct of any of these parties.[141]

Limitations of liability that parallel those provided under Part XV.2 EPA for municipalities, secured creditors, receivers, trustees in bankruptcy, fiduciaries and property investigators are found in the *Ontario Water Resources Act* and *Pesticides Act* with respect to orders issued under those Acts.[142]

Filing a record of site condition provides protection from various EPA orders dealing with contamination, as well as orders under the *Ontario Water Resources Act*, where the orders relate to contaminants discharged and on the property in question before the date the record is certified. Persons who receive this protection include:

- The person who filed the record of site condition and subsequent property owners.
- Any person occupying the property or with charge, management or control of the property after the record of site condition is filed.

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[137] *Ibid.*, s. 168.12(2).
[138] *Ibid.*, ss. 168.13 (municipalities) and 168.18 (secured creditors).
[139] *Ibid.*, s. 168.13(2).
[140] *Ibid.*, s. 168.19.
[141] *Ibid.*, s. 168.23.
[142] *Supra* note 112, ss. 89.4 – 89.14 and note 113, ss. 31 – 31.1.

- Persons who owned, occupied or had charge, management or control of the property prior to the certification of the record if the property had been sold under an agreement that the purchaser would file a record of site conditions and the purchaser has done so.[143]

The protection provided by filing a record of site condition does not apply if false or misleading information has been included in the record or if there is off-site migration of contaminants from the site after the record is certified. A person who causes or permits a property use different from that specified in the record of site condition will not be protected from orders unless there is no risk management on the site and all standards applicable to the site's actual use are less stringent than the standards applicable to the property use that is specified in the record of site condition.[144]

2.2.3.5 Regulatory tools

A broad range of regulatory tools is available primarily under EPA to deal with contaminated land. Many of these tools are orders. The various orders for which liability protection is provided under Parts XV.1 and XV.2 EPA are as follows:

- Control orders under s. 7 EPA. The Director can issue these orders to current and past owners, occupiers and persons with charge, management or control of a source of a contaminant, where a contaminant discharged into the natural environment is discharged in contravention of EPA or the regulations or is prohibited from use under the regulations.

- Stop orders under s. 8 EPA. The Director can issue these orders to current and past owners, occupiers and persons with charge, management or control of a source of a contaminant, where a contaminant discharged into the natural environment constitutes an immediate danger to human life, health or property.

- Stop or control orders under s. 12 EPA. The Director can issue these orders to the owner, occupier or person with charge, management or control of a source of a contaminant if the Director believes that the order is necessary to protect and conserve the natural environment or to prevent or control immediate danger to human life, health or property.

- Remedial orders under s. 17 EPA. The Director can issue these orders to any person who causes or permits a contaminant discharge into the natural environment that may or does injure or endanger elements of the environment, property, human health or safety.

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[143] *Supra* note 108, s. 168.7 (not yet in force) and note 115, s. 16.

[144] *Supra* note 108, ss. 168.7(2) – (4) (not yet in force).

- Preventive measures orders under s. 18 EPA. The Director can issue these orders to past and current owners or persons with charge, management or control of an undertaking or property if a contaminant release from the undertaking or property would likely cause an adverse effect and preventive action is required to prevent or eliminate such effects.

- Waste removal orders under s. 43 EPA. The Director can issue these orders to past and current owners, occupants or persons with charge, management or control of land or buildings or people who carried on prohibited activities that resulted in the deposit of waste, where waste is deposited on land or in any building not approved as a waste disposal site. It should be noted that the liability protection provided by filing a record of site condition under Part XV.1 EPA does not extend to these orders.

- Spills orders under s. 97 EPA. The Minister can issue these orders where a pollutant has been spilled and an adverse effect has occurred or is likely to occur. These orders can be issued to owners and persons having control of the pollutant; owners and persons having charge, management or control of property affected by the spill; municipalities in which the spill occurred, that border where the spill occurred or may be affected by the spill; public authorities; and any person who may be adversely affected or whose assistance is required.

- Contravention orders under s. 157 EPA. A provincial officer can issue these orders to a person in contravention (past or current) of the legislation, orders or statutory authorizations.

- Preventive measures orders under s. 157.1 EPA. A provincial officer can issue these orders to the same persons and on the same grounds as orders under s. 18 EPA.

In spite of the exemptions provided under Part XV.2 EPA to municipalities and secured creditors that take title to property and to receivers and trustees in bankruptcy, the Director can issue an order to any of these parties if there is danger to health or safety of any person, impairment of the quality of the natural environment, or injury or damage to any property or plant or animal life, as a result of contaminants on property. However, if a record of site condition has been filed with respect to the property, an order can only be issued if there is danger to the health or safety of any person. This type of order can only require such action as is reasonably necessary to ensure the conditions that gave rise to the order no longer exist.[145]

Where a record of site condition has been filed, the Director may issue an order to the property owner where there may be danger to the health or safety of any person due to contaminants on the property at the date the record is certified. This type of order can only require the owner to do such things necessary to ensure that there is no danger to the health or safety of any person.[146]

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[145] *Ibid.*, s. 168.14 (municipalities) and s. 168.20 (secured creditors, receivers and trustees in bankruptcy).

Where municipalities, secured creditors, receivers, trustees in bankruptcy and fiduciaries are operating in circumstances of limited liability under Part XV.2 EPA, these parties are obliged to give notice to a provincial officer upon becoming aware of circumstances prescribed in the regulations.[147] As well, upon written request by the Director, these parties must provide a copy of any report in their possession or control that was prepared as part of a property investigation related to contaminants.[148]

As mentioned in 2.2.3.3 above, the Director may issue a certificate of property use when a risk assessment for a contaminated property has been accepted. The certificate may require the property owner to take specified actions to prevent adverse effect on the property or to refrain from any specified property use or construction. However, the certificate cannot require the property owner to take any action that would reduce contaminant concentrations below the levels provided for in the risk assessment. Certificates of property use can be amended, added to or revoked on application by the property owner or on the Director's own initiative. Where a certificate includes requirements restraining a specified property use or construction, the owner must provide a copy of the certificate to each occupant of the property and ensure their compliance. Property occupants are bound by a certificate of property use once they have received a copy of it.[149]

Persons who can make orders or decisions under EPA affecting land can prohibit those with an interest in property from dealing with that property unless they first give a copy of the order or decision affecting that property to each person acquiring an interest in the property. A certificate setting out this prohibition can be registered against the title to the property and then binds those with subsequent interests in the property. If property subject to this prohibition is dealt with without a copy of the order or decision having first been provided, the transaction is voidable by the person who was not given a copy of the order or decision.[150] A similar provision applies under the *Ontario Water Resources Act* to directions and orders affecting land.[151]

2.2.4 Quebec

2.2.4.1 Statutory authority

In Quebec, contaminated land management is provided for primarily through the *Environment Quality Act* (EQA), and in particular, Division IV.2.1 of that Act, which deals with land protection and rehabilitation.[152] That division was updated in 2003 with the coming into force of amendments focused on clarifying liability and facilitating brownfield development.[153] Division IV.2.1 EQA applies retrospectively, with an explicit statement of retroactive application in relation to orders that can be issued against people who have caused or allowed contamination.[154]

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[146] *Ibid.*, s. 168.8 (not yet in force).
[147] *Ibid.*, ss. 168.15 (municipalities), 168.21 (secured creditors, receivers and trustees in bankruptcy) and 168.24 (fiduciaries).
[148] *Ibid.*, ss. 168.16 (municipalities), 168.22 (secured creditors, receivers and trustees in bankruptcy) and 168.25 (fiduciaries).
[149] *Ibid.*, s. 168.6 (not yet in force).
[150] *Ibid.*, s. 197.
[151] *Supra* note 112, s. 103.

It should be noted that Quebec's civil law system differs from the common law system used in the rest of Canada, which means that in some instances, different legal principles are applied. Under the civil law system, significant reliance is placed upon the legislative (or code) system, as compared to the significant role that court judgments and precedent play in the common law system.

2.2.4.2 Voluntary cleanup

While voluntary cleanup is available in Quebec, it is mentioned in a very limited fashion in EQA. Where a person is carrying out voluntary cleanup and plans to leave contamination exceeding regulatory values on site, s. 31.57 requires that person to submit a rehabilitation plan for approval by the Minister, accompanied by an implementation schedule, toxicological and ecotoxicological risk assessments, a groundwater impact assessment and a characterization study. All of these documents must be submitted before any rehabilitation work is done. EQA is silent with respect to any incentives or advantages that may be gained by undertaking voluntary cleanup.

2.2.4.3 Brownfields

There are some legislative provisions that support brownfield development in Quebec. These focus on accessibility of information related to contaminated lands, mainly by providing for registration of various notices within the provincial land register, which is the parallel of Alberta's land titles system. However, it is important to note that a land registry system does not guarantee the validity of any document registered against the land title, whereas a land titles system is based on the principle that the information contained on the certificate of title is conclusive. The practical result is that only documents that create an interest in land can be registered against title in a land titles system, which means that many of the documents that are registrable in a land registry system such as Quebec's would not be accepted for registration in Alberta's land titles system.

Notice of orders requiring submission of rehabilitation plans; plans providing for land use restrictions; contamination in excess of regulatory levels; amendment of land use restrictions; and issuance of notices of decontamination must all be registered in the land register.[155] Registration of notice of an approved rehabilitation plan that includes land use restrictions has the effect of making the plan binding on all third parties and subsequent owners.[156] As well, registration of the notices mentioned above, other than amendment of land use restrictions, gives rise to a requirement that each municipality maintain a public list of contaminated sites within its boundaries.[157] Where a property is on a municipal list of contaminated sites and subject to an approved rehabilitation plan, no building or subdivision permit or certificate of authorization may be issued unless the application includes an expert's certification that the proposed project is consistent with the rehabilitation plan.[158]

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[152] *Environment Quality Act*, R.S.Q., c. Q-2.

[153] *An Act to amend the Environment Quality Act and other legislative provisions with regard to land protection and rehabilitation*, S.Q. 2002, c. 11.

[154] *Supra* note 152, s. 31.43.

[155] *Ibid.*, ss. 31.44, 31.47, 31.58, 31.59 and 31.60.

2.2.4.4 Liability standards

Under the *Civil Code of Quebec*, allocation of liability is the default position with respect to civil wrongs; however, where evidence of causation as among the potentially responsible parties is unclear, joint and several liability will apply instead.[159] EQA provisions do not modify this approach, thus this approach applies to contaminated land liability.

The primary tool for dealing with contaminated land is the order issued under s. 31.43 EQA, requiring submission of a rehabilitation plan and implementation schedule for the Minister's approval where it appears contaminants in land exceed regulatory levels, or may adversely affect the health or safety of humans, other living species, the environment or property. These orders can be issued to those who caused or allowed the contamination, even before s. 31.43 came into effect; this explicitly gives a retroactive effect to these orders with respect to polluters. The orders can also be issued to persons having custody of the contaminated land, such as owners and lessees, but applies to those parties only after s. 31.43 came into effect.

Section 31.43 creates exemptions for certain persons having custody of contaminated land:

- Where the person was unaware of and had no reason to suspect that the property was contaminated;
- Where the person acted in accordance with the law once they became aware of the contamination; or
- Where the contamination was caused by off-site migration from a source attributable to a third party.

In a number of circumstances, the Minister may take steps to remedy defaults by persons under EQA, including failures to carry out approved rehabilitation plans according to schedule or in accordance with their terms. In those instances, the Minister can act to remediate the contaminated land or to ensure that the remediation plan is implemented. Where the Minister takes remedial action, the government may seek cost recovery against the person in default, with government costs secured by a legal charge against both real and personal property of the person in default.[160]

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[156] *Ibid.*, s. 31.47.

[157] *Ibid.*, s. 31.68.

[158] *Ibid.*; *An act respecting land use planning and development*, R.S.Q., c. A-19.1.

[159] Arts. 1478, 1480-81 C.C.Q.

2.2.4.5 Regulatory tools

There is a range of regulatory tools available under EQA for contaminated land management. As mentioned above, one of the main tools is the order under s. 31.43, which directs submission of a rehabilitation plan and implementation plan for the Minister's approval. Linked to this order is an order under s. 31.49. Where the same conditions that give rise to a s. 31.43 order are present, the Minister may order any one who could be subject to a s. 31.43 order to carry out a characterization study, which appears to be the same as an environmental site assessment. Issuance of either of these orders do not affect the civil remedies that are available to persons who receive those orders to seek recovery from others for compliance costs or increases in land value from rehabilitation.[161]

A rehabilitation plan can propose to leave contaminants on site in excess of regulatory limits, if accompanied by toxicological and ecotoxicological risk assessments and a groundwater impact assessment. The plan must include a statement of any land use restrictions that are to apply.[162] Where the owner of contaminated property is not subject to an order issued to others to submit a rehabilitation plan, the Minister must give the owner notice of all documents submitted under such an order, together with an opportunity to make submissions regarding the rehabilitation plan. A rehabilitation plan proposing land use restrictions cannot be approved unless the landowner's written consent is submitted with the plan to the Minister.[163]

When an approved rehabilitation plan has been completely implemented, an expert's certificate must be submitted to the Minister, indicating that all actions were carried out in accordance with the plan.[164] When land is decontaminated, the person who registered a notice of contamination in the land register or the landowner may apply for a notice of decontamination in the land register. This application must be supported by a characterization study that shows either no contamination or contamination at levels below those established by the regulations. A notice of decontamination must indicate any land use restrictions in the land register that are no longer applicable due to the decontamination.[165]

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[160] *Supra* note 152, s. 31.62.

[161] *Ibid.*, s. 31.50.

[162] *Ibid.*, s. 31.45.

[163] *Ibid.*, s. 31.46.

[164] *Ibid.*, s. 31.48.

[165] *Ibid.*, s. 31.59.

In some circumstances, a requirement to carry out a characterization study can be triggered without issuance of a s. 31.49 order. Where there is a permanent cessation of any industrial or commercial activity designated by the regulations, a characterization study of the property on which that activity took place must be done within 6 months by the operator of the activity. If the study shows contamination in excess of regulated levels, the operator must submit a rehabilitation plan and implementation schedule for approval by the Minister.[166]

In addition, where a change of land use is planned for the site of an industrial or commercial activity designated by the regulations, a characterization study must be done before the land use can be changed, unless such a study already exists and an expert certifies that the study is current and complies with the guideline for preparation of characterization studies.[167] If contaminants are present on the site in excess of regulated levels, any intended change in land use is subject to the Minister's approval of a rehabilitation plan. The rehabilitation plan can provide for contamination exceeding regulated values to be left on site, in the following circumstances:

- Toxicological and ecotoxicological risk assessments and a groundwater impact assessment must be submitted with the rehabilitation plan.
- The plan proponent must give public notice by newspaper, hold a public meeting and make all relevant documents available for public review, and then must submit a report about the public meeting with the plan and also make that report publicly available.[168]

There are orders not directly related to contaminated land that could be used to address such problems. In instances of substance release, the Minister can issue an order to anyone responsible for the source of contamination, requiring action to stop or limit the release. The Minister is obliged to give 15 days notice to the party or parties responsible for the source of the contamination before issuing the order. This notice period is intended to give those parties an opportunity to make submissions to the Minister before the order is issued.[169] The Minister is also able to issue a temporary emergency order, which applies for not more than 30 days, without prior notice where a release poses immediate danger to a person's life or health or danger of serious or irreparable damage to property.[170]

The Minister may also issue similar orders where hazardous materials could cause harmful effects to the health of humans or other species or damage to the environment or property. These orders are issued to the person with custody or possession of the hazardous material, and can direct that person to take steps to prevent or reduce the harmful effects or damage. As with the substance release orders, the longer term order requires prior notice and an opportunity for the person to make submissions, and shorter term emergency orders can be issued without prior notice.[171]

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[166] *Ibid.*, s. 31.51.
[167] *Ibid.*, s. 31.53.
[168] *Ibid.*, s. 31.54.
[169] *Ibid.*, s. 25.
[170] *Ibid.*, s. 26.

3.0 American state jurisdictions[172]

3.1 Introduction

In 1976, New Jersey's landmark *Spill Compensation and Control Act* pioneered the concept of government programs to clean up contaminated land. Four years later, Congress modeled the *Comprehensive Environmental Response, Compensation, and Liability Act* of 1980 (CERCLA, generally referred to as Superfund) on New Jersey's legislation. Since the passage of the federal Superfund law, the United States has realized that contamination of land and water with hazardous substances is far more common, and more expensive to clean up, than originally thought. Coordinated cleanup efforts between federal and State agencies currently address numerous sites targeted by the U.S. Environmental Protection Agency's (EPA's) National Priorities List (NPL), the list of sites with uncontrolled releases of hazardous substances that are the highest priority for long-term remediation.

At NPL sites, the role of the States ranges from required cost sharing at federally funded cleanups to active site management. A vast number of contaminated sites do not meet the criteria for inclusion on the NPL. For these non-NPL sites the Federal government's role is likely to be limited to site assessment and emergency response or removal activities. For many non-NPL sites, the Federal government may not be involved at all. Thus, if any government-supervised activity is to occur at non-NPL sites, States will have to oversee, enforce, or fund cleanups. For these reasons, the role of the States in addressing contaminated sites, independently and in concert with the Federal government, has become increasingly important. The prospects for increasing State involvement at both NPL and non-NPL sites depend on the willingness and capacity of States to develop effective programs, obtain adequate resources to fund cleanups, encourage private party cleanups, take enforcement action where needed to ensure private cleanups, and oversee private cleanups.

3.2 State Superfund programs

That State cleanup laws are independent of the federal Superfund statute is critical to understanding the current state of development of State cleanup programs. The absence of a requirement to submit their programs to Federal review and approval has enabled States to experiment widely and to develop some highly innovative and effective cleanup programs. Nevertheless, the majority of the State cleanup programs have authorities similar to the federal Superfund program. A State "superfund" or cleanup program has some or all of the following characteristics:

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[171] *Ibid.*, ss. 70.1 – 70.4.

[172] *An Analysis of State Superfund Programs: 50-State Study, 2001 Update* (Washington, D.C.: Environmental Law Institute, 2002).

1) Procedures for emergency response actions and more permanent remediation of environmental and health risks;

2) Provisions for a cleanup fund or other financing mechanism to pay for studies and remediation activities;

3) Enforcement authorities to compel responsible parties (RPs) to conduct or pay for studies and/or site remediation;

4) Staff to manage State-funded remediation and to oversee RP-conducted remediation; and

5) Procedures for public participation in decision-making on site cleanup.

3.3 State activities

A variety of activities are being taken by States to protect human health and the environment from risks associated with sites contaminated by hazardous substances. These are examined below.

3.3.1 Voluntary cleanup

The majority of States have voluntary cleanup programs established by statute. States that do not have voluntary cleanup programs nevertheless allow private parties to initiate voluntary cleanups.[173] Most States apply the same cleanup standards to voluntary cleanups as they apply to State lead or enforcement cleanups. Most States encourage voluntary cleanups by offering some form of incentive to volunteers.

Voluntary cleanup programs are State-sponsored programs that encourage private parties to conduct cleanups of contaminated properties in the absence of State enforcement measures. The States typically set the eligibility requirements for participation in voluntary cleanup programs, establish cleanup standards and provide oversight of the cleanup activities. Voluntary cleanups typically require fewer resources and funding from the State than State-funded or enforcement-based cleanups. Accordingly, voluntary cleanup programs often allow States to leverage their resources, concentrate their efforts, and achieve additional cleanups.

States have created voluntary cleanup programs in the absence of federal legislation and there are no federal standards that States must meet. Therefore, voluntary programs vary considerably from State to State in terms of formality and structure.

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[173] The U.S. Environmental Protection Agency (EPA) is authorized by section 104 of CERCLA to respond directly to a release or threatened release of hazardous substances at a contaminated site. Alternatively, EPA may permit or compel private parties to conduct cleanup under the authority of sections 104(a) and 106 of CERCLA.

3.3.1.1 Authority

States derive authority for their voluntary cleanup programs in several ways: specific statutory authority; the general authority of the State's hazardous waste laws; regulations issued pursuant to current statutory authority; and guidance or policy. Most State voluntary programs are specifically established by statute.

3.3.1.2 Eligibility

Most States limit participation in their voluntary programs in some manner. There are two basic approaches to defining eligibility for State voluntary programs: by site characteristics and by the type of volunteer. Some use one approach or the other, but many use a combination of the two approaches. One common approach is to preclude sites that are subject to pending enforcement or regulatory actions under either State regulatory programs (hazardous waste, cleanup, underground storage tank, or above ground storage tank) or federal programs (Superfund or *Resource Conservation and Recovery Act* [RCRA]) or both. This approach is often used in conjunction with other eligibility criteria.

3.3.1.3 Cleanup standards

Cleanup standards for voluntary sites are typically the same as the standards applied at State lead or enforcement sites. Thus, contrary to the common perception that States may apply less stringent cleanup standards to voluntary cleanups than to other types of cleanups, it appears that, at least on paper, the standards are usually identical. In some cases, the voluntary standards are statutory but the State cleanup standards are established in policy or applied on an ad hoc basis.

3.3.1.4 Incentives

Most States provide incentives for participation in their voluntary cleanups, in an effort to overcome deterrents to performing voluntary cleanups, including potential liability, cleanup costs, and transaction costs. Some of these incentives include:

- Some form of liability release upon completion of voluntary cleanup activities, contingent upon State approval of the cleanup and limiting the protection to only the contamination addressed by the cleanup activities, excluding unknown, pre-existing contamination or new releases of hazardous substances;

- The covenant not to sue, and that the State will not take enforcement action against the volunteer for contamination addressed by the cleanup;

- The "No Further Action" letter, which includes the State's assurance that, based on currently known facts, it is unlikely to require the volunteer to take further action with respect to contamination addressed by the voluntary cleanup;

- Certificates of completion or approval letters that provide liability relief;
- Indemnification letters to volunteers for any future claims;
- Liability protection to parties that are not responsible for the contamination;
- Expedited and/or efficient cleanup oversight processes that include clear end points and deadlines for agency determinations;
- Some variation of a streamlined process for voluntary cleanups as an incentive for participation;
- Tax credits, financial assistance in the form of low interest loans, tax credits or incentives often offered through economic development programs;
- Orphan share funding as an incentive for voluntary cleanups;
- Declining to issue a lien or notice of hazardous substance on the property deed;
- Providing technical assistance to volunteers; or
- Recording the completion of cleanup activities on the deed and sending a letter to the building permit agency.

3.3.1.5 Funding

States typically require participants to reimburse them for voluntary cleanup oversight costs, either in the form of a flat fee or on the basis of actual costs, or a combination of both. This way the States ensure that their costs are recovered. Some States impose no fees on volunteers.

3.3.2 Brownfields

States define brownfields in a variety of ways, but the term typically refers to urban industrial or commercial facilities that are abandoned or underutilized due, in part, to environmental contamination or fear of contamination. States have made special efforts in recent years to target brownfields for cleanup and reuse for several reasons, including the potential to revitalize distressed communities, increase tax dollars, and provide new jobs. States take a wide range of approaches and use an assortment of tools. Some States specifically address brownfields through their voluntary cleanup programs, others supplement their voluntary program activities, and still others have separate brownfields cleanup and redevelopment programs.

The difference between voluntary and brownfields programs can be a question of semantics rather than substance. In theory, a brownfields program would focus on urban, rather than rural, sites and on industrial sites rather than spill or dump sites, and a voluntary cleanup program would be open to volunteers at any type of site in any location. In practice, however, State voluntary cleanup and brownfields programs do not necessarily make those distinctions. For example, a voluntary program in one State may focus more heavily on cleanup of brownfields sites than a "brownfields" program in another State. For this reason, it is important to look at both voluntary and brownfields programs to determine the brownfields redevelopment activities in any given State.

Typically, however, voluntary programs do not focus on redevelopment nor do they target urban sites specifically. Rather, voluntary programs are more often aimed at getting simple, less contaminated sites cleaned up regardless of whether they are reused. Brownfields programs, on the other hand, are more likely to focus on redevelopment and be part of a broader State strategy or set of social policies aimed at improving distressed urban areas.

3.3.2.1 Cleanup standards

Almost all of the States use the same cleanup standards for brownfields and voluntary cleanup sites.

3.3.2.2 Incentives

Almost all States with brownfields programs provide incentives for participation. These incentives fall into two general categories: liability relief and financial incentives.

3.3.3 Liability standards

The most important issue in enforcement is determining who can be charged with liability for cleanup of hazardous substances. Most of the State statutes have followed the federal lead by making a wide spectrum of actors "responsible parties." The majority of State liability standards provide a means to reach the same parties that CERCLA does—owners, operators, generators, transporters, etc.

A few States have more difficulty reaching beyond owners and operators of disposal sites. For example, States that rely on *Resource Conservation and Recovery Act* (RCRA) type authorities for enforcement generally must show a RCRA violation or, at least, RCRA jurisdiction over the actor or the site at the time that the disposal occurred. However, even in these States, solid waste laws or imminent danger provisions can provide a longer reach. Because most States also have a general provision prohibiting pollution of "waters of the State," even those States without CERCLA-type authority can at least arguably reach generators or transporters that have placed hazardous material where it has entered groundwater.

Standards of liability in all of the States involve two questions. These two questions must be answered separately in order to understand a liability scheme. Unfortunately, they are often confused in public discussion. The first question is whether any showing of fault is required in order to render a party liable. In other words, is liability strict—based solely on the occurrence of a release—or does it require proof of fault, such as reckless or negligent handling? This is the *culpability* standard.

The second question is how liability is to be divided among the various actors who contributed to the presence and release of a hazardous substance. This is the issue of how liability is to be allocated. Is liability joint and several, proportional, or some combination of both? This is the *allocation* standard.

3.3.3.1 State culpability standards

Strict liability is the most frequently used culpability standard in State cleanup programs. Strict liability means that the enforcement agency does not need to prove that the responsible party committed a negligent, reckless, or intentionally wrongful act. Rather, it must show simply that the party contributed to a release of hazardous substances. With strict liability, a responsible party who has contributed to hazardous conditions at a site is liable for cleanup costs based simply upon the occurrence of a release, without proof of fault.

Liability standards other than strict require the State to satisfy a higher burden of proof, such as proof of negligence or wilful intent by a responsible party. This, in turn, requires the State to spend more resources investigating the past intent of parties involved in a particular site. Liability standards that require proof of fault effectively limit the universe of parties to whom cleanup liability may attach. This, in turn, is likely to reduce the effectiveness of the cleanup program.

3.3.3.2 State allocation standards

Most hazardous substance sites have more than one potentially responsible party. These may include site owners and operators, generators of the hazardous substances, transporters of the hazardous substances, and various arrangers and disposers. Absent a statutory prescription of an allocation standard, joint and several liability is the normal common-law method of assigning costs among responsible parties where more than one party causes harm. It is used in the federal CERCLA program. The joint and several liability standard means that each company that contributed in any way to the presence or release of hazardous substances is held responsible for the *entire* liability unless it can show that its contribution to the harm was distinct and divisible.

Joint and several liability enables a government to sue one or more of the responsible parties for the full amount of the cleanup, and leave it to them either to prove that their share is divisible or to pay the government the full amount and then seek to recover contributory shares from other responsible parties. Joint and several liability has been a cornerstone of the federal program and many State programs because it allows the government to commence enforcement or cleanup before all information on the history of the site is available. It also conserves governmental funds by placing the burden of allocating costs on the private parties responsible for the contamination. Joint and several liability does not generally result in a single party bearing all of the costs. Instead, it generally promotes the formation of committees among the responsible parties to attempt to work out their shares among themselves.

In contrast, proportional liability requires the government to allocate liability in shares among the responsible parties by proving their proportional responsibility (which may be determined in a variety of ways). In addition, the government must pick up the tab for any defunct organizations that contributed to the hazardous substances released. A few State laws use proportional liability schemes, and some States use a hybrid approach. Many states have strict liability, joint and several liability, or a combination of both to allocate responsibility for costs among multiple responsible parties at a contaminated site. A small number of states use joint and several liability also allow responsible parties to enter into an allocation process or prove a divisible share of the total cost. Only five States specify proportional liability as the only allocation standard. In most of these States, while liability begins with a joint and several presumption, the opportunity to prove a divisible share is afforded.

Many States provide some form of release from liability for future cleanup, but these releases vary widely in form and substance.

Many States also have independent State authority to recover for damage to natural resources at sites contaminated by hazardous substances, but few States have recovered for such damages.

3.3.3.3 Retroactive liability

Retroactive liability imposes liability for actions that occurred prior to the date a cleanup statute or program was enacted. Many States have retroactive liability under their State cleanup laws.

3.3.4 Cleanup criteria

Determining the appropriate and feasible level of cleanup for hazardous sites involves technical, administrative, and economic considerations that are necessarily evaluated on a site-by-site basis. The States vary considerably in the extensiveness and formality of procedures used to set cleanup standards. Nearly all of the States employ federal guidelines and standards as part of the process of cleanup determination. Those States with the most active cleanup programs have adopted procedures for determining cleanup levels using a wide array of cleanup criteria. These procedures generally involve the application of health-based risk assessment and an evaluation of cost effectiveness and land use factors on a case-by-case basis.

A number of criteria are used by States to determine cleanup levels at hazardous sites. These criteria include: risk assessment for carcinogens and noncarcinogens, background levels, water quality criteria, maximum contaminant levels (MCLs) or maximum contaminant level goals (MCLGs), groundwater standards, soil standards, and land-use based criteria. A State may use different criteria at different sites, as appropriate. Most

States use carcinogenic risk levels between 10^{-4} and 10^{-6} with a Hazard Index of 1 for non-carcinogens.

One shift that has occurred over the years is how background levels are used. Initially some states used background levels as a stringent cleanup standard, requiring cleanup beyond health-based standards if background levels were lower. Many States now use background levels as an endpoint for cleanup when the background level of a contaminant of concern is higher than the otherwise applicable standard.

In recent years, land use has become a more significant factor in determining cleanup standards. In general, cleanup standards are established after deciding how a particular site will be used after the cleanup is completed. Furthermore, exposure pathways are considered based on expected land use. Thus, if a site will be used for an industrial or commercial facility—where children will not be exposed to contaminated soils, or groundwater will not be used for drinking—the cleanup standards may be set at existing levels. In such cases, contaminated groundwater or soils may be left in place because the planned land use of the site will reduce the risks associated with human exposure to those contaminants.

If future land use is taken into consideration in determining cleanup levels, there must be some mechanism for assuring that land will continue to be used in a manner that is compatible with the cleanup. Land use then becomes an integral part of maintaining the protectiveness of the cleanup. Mechanisms for maintaining appropriate land uses are institutional controls, and include zoning, notices in deeds or property records, restrictions on use of property placed in the deed, and regulatory restrictions on the use of groundwater. Many States use deed notices or deed restrictions as institutional controls. Some States have no institutional controls in place.

3.3.5 Regulatory tools

Virtually all State programs have authority to issue administrative cleanup orders. Where such authority is not available under a State cleanup statute, it often is available under a solid and hazardous waste law, a groundwater protection law, or a general imminent endangerment provision. All States have authority to seek injunctions for cleanups. Both order authorities and injunction authorities are limited by the substantive provisions of State law; some do not reach generators, some require proof that the release is of a "hazardous waste," and some are as broad as or broader than the federal Superfund program.

State cleanup orders are not always identical to CERCLA section 106 orders, which are not subject to pre-enforcement review. In many of the States, a responsible party receiving an administrative cleanup order has the right to seek review of that order before a board, commission, or State court.

Recovery of punitive damages is provided for in most States. Recovery of treble damages is authorized in many States.[174]

The States' standards for assessment of punitive damages vary somewhat, but generally require more than simple refusal to do the work directed in an order. For example, the Pennsylvania statute requires "wilful" failure to comply. The New Jersey courts have created a "good faith" defense to such damages.

Most States have civil penalty provisions usable in enforcing cleanup of hazardous sites, but most rely on their hazardous waste laws, water pollution laws, and solid waste laws rather than on State superfund laws for this purpose. Moreover, in practice, penalties have not been highly important in securing cleanup actions. The potential to perform State-funded cleanups and recover punitive damages has been a much stronger incentive. The real force of this incentive depends upon the credibility of the State's threat to spend fund monies. The enforcement leverage is minimal to nonexistent in those States where the fund may only be expended for the State share of NPL cleanups or for emergency responses, or where it may be expended on State sites only after a lengthy listing process or by special enactment of the legislature. In contrast, in those States where expenditures can be authorized relatively quickly, the States' enforcement leverage is enhanced.

Criminal penalties are not a factor in most State cleanup programs. Virtually all of the State programs contain provisions making the submission of false information or failure to pay fees (where State funds are supported by fees) criminal offences. In general, the failure to comply with a State cleanup order is not a criminal offence. However, solid and hazardous waste statutes provide a broad range of criminal offences that may reach unlawful disposal and other types of conduct.

3.3.6 Property transfer

Many states have laws, regulations, or policies that link the discovery, identification, investigation, cleanup, or disclosure of hazardous substance contamination to transfers of real property, or to transfers of ownership or control of such property.

3.3.7 Long term stewardship

Some sites that have been cleaned up require restrictions on their use and long-term stewardship even after a cleanup is completed. Long-term stewardship is of growing importance due to the increasing use of remedies, in mandatory, voluntary, brownfields, and RCRA cleanup programs, that allow hazardous substances to remain in place at levels that do not allow for unrestricted use.

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[174] Certain statutes require that after the jury has determined the amount of the plaintiff's actual damages, the court must award three times that amount.

Institutional controls are the most common long-term stewardship activity, with many states relying upon these measures to manage risks from residual contamination. These include the following:

- Proprietary institutional controls such as informational systems, including signs, educational materials, published notices, warnings about consumption of fish or wildlife, site registries, and databases;
- Governmental or regulatory institutional controls, such as zoning, local ordinances, building permits, and well drilling or groundwater use restrictions;
- Established schedules for auditing sites where institutional controls have been implemented;
- A system for recording and maintaining information about sites that have institutional controls; and
- The right to require additional work at a site under certain conditions.

3.4 State Comparison – Massachusetts, Michigan, California, and Oklahoma

This section of the report examines the programs implemented for the cleanup of contaminated sites in four states: Massachusetts, Michigan, California, and Oklahoma.

3.4.1 Massachusetts

3.4.1.1 Statutory authority

The *Massachusetts Oil and Hazardous Material Release Prevention and Response Act* authorizes the Department of Environmental Protection (DEP) to ensure the clean up of sites contaminated by oil or hazardous material.[175] The law provides for enforcement; strict, joint and several liability; cost recovery; public participation; natural resources damages assessment and recovery; voluntary cleanups; and brownfields cleanups.

3.4.1.2 Voluntary cleanup

Massachusetts' statute authorizes voluntary cleanups as an integral part of the cleanup program. Anyone is eligible to participate in a voluntary cleanup. Incentives for participating in the program include a streamlined cleanup process, no waiting period for State oversight, and clear endpoints. Funding for the State's activities comes from permit fees (for "Tier 1" cleanups) and compliance fees.

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[175] Mass. Gen. Law c. 21E (1983).

3.4.1.3 Brownfields

The State's brownfields program, previously limited to a covenant not to sue provision, was expanded by legislation in 1998 that added a number of tools designed to encourage and assist redevelopment of brownfield sites. These tools include liability endpoints, a fund for site assessments and remediation, State-subsidized environmental insurance, and State tax credits for response actions. These tools are available at any brownfields site depending upon ownership, location and development plan.

3.4.1.4 Liability standards

Massachusetts has strict, joint and several liability. Liability is also retroactive. DEP provides potentially responsible parties with an opportunity to clean up a site; if the party cannot or will not, DEP may clean up the site and recover costs. The rate of voluntary cleanups is high (95%), which program staff attribute to the statute's provisions for priority liens, punitive damages equal to treble the State's costs, and annual compliance assurance fees, which are assessed for every year a site is in the cleanup process.

3.4.1.5 Regulatory tools

The 1992 statutory amendments authorize DEP to issue an order to remedy an imminent hazard, which is enforceable immediately and not subject to judicial review except in a proceeding to collect penalties for violations of the order or to obtain reimbursement for the costs of complying with the order. Civil penalties of $25,000 per day are available.

3.4.1.6 Cleanup criteria

Permanent cleanup solutions must eliminate significant risk of harm to health, safety, public welfare and the environment, and cleanup to background conditions is required where feasible. Temporary solutions are required at all sites if a permanent solution is not feasible.

Regulations (the Massachusetts Contingency Plan) set out three methods for establishing cleanup standards at disposal sites. The first method relies on numeric cleanup standards for 105 chemicals in three groundwater categories and three soil categories. The second method allows modification of the Method 1 numeric standards based upon site-specific fate and transport information. The third method establishes cleanup goals based on site-specific conditions and a quantitative risk assessment. For sites at which a quantitative risk assessment is used to determine cleanup standards, any applicable or suitably analogous Massachusetts health and environmental standard must be met, *and* Cumulative Receptor Risk Limits must be achieved. The cancer risk limit is a cumulative excess lifetime cancer risk of 10^{-5}.

The non-cancer risk limit is expressed as a Hazard Index of 1, and is calculated for groups of chemicals with the same mechanism of toxic action. Restrictions on site use (Activity and Use Limitations) are required if the remediation goals are based upon anything less than the most sensitive (*i.e.*, residential) use. Use restrictions are implemented through a deed notice or deed restriction.

3.4.1.7 Property transfer

Massachusetts has no property transfer provisions. The State maintains a database of sites that is publicly available.

3.4.1.8 Long term stewardship

Massachusetts has implemented an audit program which aids in long-term stewardship and that covers the State and voluntary, brownfields and RCRA cleanup programs. The program includes monitoring institutional controls, enforcement, and review. The program also includes a database to track the cleanup process at all sites, including federal facility sites. This site progress database is available to the public by request, although the primary users of the system are State employees.

Institutional controls have dealt primarily with deed restrictions or deed warnings. The State also publishes notices in the local newspaper, distributes mailings to relevant residents and includes notices in a site register made available to the public through the internet in order to notify the public on site progress and institutional controls.

3.4.1.9 Funding

The State uses three funding methods for contaminated site programs:

- Bond (General Obligation) fund, to fund public response actions. Bond funds may be used for site investigation, studies and design, removals, emergency response, remedial actions, CERCLA match, operations and maintenance, and grants to citizen groups and local governments for technical assistance

- The Oil and Hazardous Waste Material Response Loan is used for program administration costs

- The Brownfields fund is used for program administration costs and for audits of site cleanups (in the case of brownfields).

3.4.2 Michigan

3.4.2.1 Statutory authority

The *Michigan Natural Resources and Environmental Protection Act* (NREPA) establishes a State cleanup fund and provides for enforcement authorities, a priority list, natural resource damages recovery, citizen suits, water replacement, contaminated property transfer requirements, and voluntary cleanups.[176]

Michigan has adopted three brownfields redevelopment provisions. The *Brownfields Redevelopment Act*, as amended, provides tax increment financing for the redevelopment of brownfields, which includes blighted and financial obsolete properties.[177] The *Single Business Tax Amendment* provides a tax credit for brownfields redevelopment,[178] and the *Obsolete Property Rehabilitation Act* provides tax abatement for brownfields redevelopment.[179]

3.4.2.2 Voluntary cleanup

The Michigan voluntary cleanup program was established in 1994 under NREPA. All sites and potentially responsible parties are eligible for the program, other than those parties that are subject to an Administrative Order or Judicial Decree. Incentives for the program include exemption from liability for existing contamination by performing a Baseline Environmental Assessment (BEA) and submitting it to the Department of Environmental Quality (DEQ). Financial incentives include grants, loans, tax increment financing, tax credits, and tax abatements. The state charges a fee of $750 that includes review of the BEA for adequacy and sending a written opinion to the submitter.

3.4.2.3 Brownfields

The State brownfields program, the Site Redevelopment Program, was established in 1994 under NREPA. All properties that are contaminated above residential standards that have redevelopment potential are eligible for participation in the program. Incentives for participation in the program include: grants, loans, State-conducted brownfields cleanup, tax increment financing, State business tax credits, and tax abatements.

3.4.2.4 Liability

Under Michigan law, a party is not liable for the cost of clean up actions if:

- they have not done anything to cause a release of a hazardous substance; and they are an operator of a contaminated property, and they acquired that property before June 5, 1995, or

- they purchase or begin operation at a contaminated property after June 5, 1995, and were not responsible for the release that caused the contamination, and they conduct an adequate Baseline Environmental Assessment (BEA) of their property prior to or no later than 45 days after purchase or start of a new release.

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[176] Public Act 451 of 1994, Part 201.

[177] Public Act 381 (1996).

[178] Public Act 143 (2000).

[179] Public Act 146 (2000).

The purpose of a BEA is to gather sufficient information about the property being transferred to allow a new release to be distinguished from existing contamination. Part 201 allows a person to petition the Department of Environmental Quality (DEQ) for a determination that their BEA satisfies the requirements for the liability exemption. Non-liable owners of contaminated property have Part 201, Section 7a "due care" requirements, but are not responsible for complete cleanup of existing contamination. The "due care" required by this section includes taking measures necessary to prevent exacerbation of existing contamination, assuring that the use of the property protects the public health and safety, and taking reasonable precautions against acts of a third party. To maintain liability protection, the owner or operator must disclose the results of the BEA to a person who will become an owner or operator. A person who is liable under Part 201 is jointly and severally liable for lawfully incurred response activity costs to clean up a site (to the State or any other person) and natural resource damages.

3.4.2.5 Regulatory tools

Part 201 provides for civil penalties of not more than $1,000, $10,000 or $25,000 per day depending on the violation. A $1,000 per day fine may be imposed for failure to diligently pursue response activities upon written request by the department. A civil fine of $10,000 per day may be imposed for a violation of Part 201 or a rule promulgated under Part 201. A $25,000 per day fine may be imposed for a violation of certain judicial orders or administrative orders issued under Part 201 and those violations may also be subject to treble damages.

3.4.2.6 Cleanup criteria

Part 201 authorizes the DEQ to establish cleanup standards in land-use based categories. Exposure assumptions used to calculate cleanup criteria account for the differences in potential exposure to contamination that result from differences in land use. The categories for cleanup criteria are residential, commercial, industrial, and recreational. Additional categories (designated "limited" categories), are also provided for, as well as the potential for site-specific risk assessment. The person cleaning up the site is able to select the category of cleanup standard, provided that their remedial action plan documents that the cleanup criteria category is consistent with the zoning at the facility.

Flexibility has been added to requirements that aquifers be remedied in all cases. The DEQ may waive the mandatory aquifer cleanup requirement on a site-by-site basis, using established criteria. The need for soil cleanup will be determined by considering only the vulnerability of the aquifers or aquifers at the site in question. To assure that the off-site movement of contaminated soil does not result in problems at other locations, provisions are included to control the relocation of contaminated soil.

The categorical cleanup standards require that land use and/or resource use restrictions be imposed at sites that are not cleaned up to residential criteria. Land use and resource restrictions can be accomplished through a number of mechanisms: a "notice of environmental remediation" for sites that require no restrictions other than the category of land use, or through restrictive covenants or institutional controls (e.g., local ordinances to control water well construction) for sites that require no more control. Notice of any land use or resource use restrictions must be given to the local unit of government and to subsequent purchasers of the property.

3.4.2.7 Property transfer

In addition to the requirement to disclose the results of the BEA to a person who will become an owner or operator, Part 201 also requires that a person who knows or is on notice through a recorded instrument that their property is contaminated, must provide written notice to the purchaser (or transferee) and disclose the general nature and extent of the contamination. A person shall not transfer an interest in a property without disclosing any land or resource use restrictions that apply to property as part of a remedial action that has been or is being implemented under Part 201.

3.4.2.8 Long term stewardship

Michigan has a long-term stewardship program for State cleanup, brownfields and RCRA cleanup programs. Long term stewardship elements that are included in these programs are monitoring institutional controls, and enforcement. Although long term stewardship activities are not specifically or separately funded in Michigan they are part of the responsibility of the field staff. Michigan does not have a database that tracks institutional controls. The State's new program database however is designed to track long-term stewardship information.

3.4.2.9 Funding

The State uses four funding methods for contaminated site programs:

- The Environmental Protection Bond for site investigation, CERCLA match, studies and design, operations and maintenance, removals, grants to local government, remedial actions, program administration and demolition. Bonds are a significant source of the Fund, and interest is a minor contributor.

- The General Fund for site investigation, CERCLA match, studies and design, operations and maintenance, removals, emergency response, grants to local government, remedial actions, and program administration. State appropriations are a significant funding source, and penalties are a minor source.

- The State uses the Cleanup and Redevelopment Fund for site investigation, CERCLA match, studies and design, operations and maintenance, removals, emergency response, grants to local government, remedial actions, and program administration. State appropriations are the major source of the Fund; bonds, cost recovery, interest, private funds, user fees, and bottle return escheats are minor contributors.

- The Clean Michigan Fund for site investigation, CERCLA match, studies and design, operations and maintenance, removals, grants to local government, remedial actions, program administration, and demolition.

Michigan maintains a priority list based on known or suspected releases, contaminant concentrations in excess of Michigan generic residential cleanup criteria, and observed releases.

3.4.3 California

3.4.3.1 Statutory authority

The *Hazardous Substance Account Act*, which includes the *Hazardous Substance Cleanup Bond Act of 1984*, establishes the site mitigation program and provides for cleanup fund, enforcement authority, priority list, water replacement, and voluntary cleanup.[180] Property transfer disclosure requirements and natural resource damage are included at section 25359.7, and section 25352 of the Cal. Health and Safety Code, respectively.[181]

3.4.3.2 Voluntary cleanup

The State has a Voluntary Cleanup Program that was administratively established in 1993 and is operated under the same regulations as the State cleanup program. It is open to all contaminated sites, except for Federal or State superfund sites, military sites, facilities outside of the Department of Toxic Substances Control's (DTSC) jurisdiction, and leaking underground storage tanks. As an incentive, the program gives responsible parties more control over cleanup, timing and methods. The State's oversight costs are totally funded by responsible parties.

3.4.3.3 Brownfields

California has a Brownfields Program for properties that are contaminated, or thought to be contaminated and underutilized due to perceived remediation costs and liability concerns. This program includes RCRA sites, but not leaking underground storage tanks. Standards are identical to those in the State cleanup and voluntary programs. The State provides tax credits, some loans and grants, and limited liability relief for projects under the Brownfields Program. The DTSC is in the process of implementing a program to provide loans for investigation and remediation.

3.4.3.4 Liability

The State has strict and proportional liability standards. DTSC generally proceeds under CERCLA to recover its costs.

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[180] Cal. Health and Safety Code (1981).

[181] *Ibid.*

3.4.3.5 Regulatory tools

The State has civil or administrative penalty authority for up to $25,000 per day for violating an order or agreement, and criminal penalties up to $25,000 per day and/or imprisonment for up to one year. Treble punitive damages are available. There is a citizen suit provision under Proposition 65. A responsible party may seek judicial review of a final remedial action plan. A responsible party must be given notice and opportunity to assume cleanup responsibility, and fail to comply, in order for the State to undertake a cleanup or enforcement activity. Legislation allows cooperating responsible parties to sue non-cooperating responsible parties for three times their share of cleanup costs. The cooperative responsible parties get fifty percent of the award and the Department gets fifty percent of the award.

3.4.3.6 Cleanup criteria

The DTSC has one set of standards that cover all cleanup sites, including voluntary cleanups. California sets toxic levels at 10^{-4} to 10^{-7}, with 10^{-6} as a point of departure. Remedial action plans must be based upon, among other things, the effect of contamination on beneficial uses of resources, the effect of alternative remedial action measures on groundwater, site-specific characteristics, and cost effectiveness. The State has promulgated maximum contaminant levels for many water contaminants and a number of other standards, including air toxics. The State also uses background levels. The DTSC Voluntary Cleanup Program (VCP) was established administratively. Land use restrictions are required if exposure settings demonstrate the need or if the property is not remediated for unrestricted residential use. Regulations regarding land use restriction covenants are under development.

3.4.3.7 Property transfer

California requires disclosure of contamination before the transfer of nonresidential property, and deed recording. The State's residential property transfer law also requires disclosure of known environmental hazards prior to transfer of certain residential properties. The State also maintains a database of sites.

3.4.3.8 Long term stewardship

The DTSC has a long-term stewardship program that covers all cleanup activities, including VCP and RCRA. The State allows institutional controls, monitors and enforces cleanups, and completes audits. As mandated by state law, the DCTS maintains a list of deed restricted properties that is available on the Internet.

3.4.3.9 Funding

The State uses three funding methods for the application of regulatory tools:

- The Hazardous Waste Control Account (HWCA) for site investigation, studies and design, removal and remedial actions (prohibited until responsible parties are given notice and opportunity to clean up), emergency response, operations and maintenance, State CERCLA match, program administration, and enforcement against responsible parties. The HWCA is supported primarily by waste fees, and is spent down each year. In the future a dedicated tax will support this fund.

- The Reimbursement Fund comes from appropriations by the State and user fees. This fund can be used for site investigation, studies and design, removal, operations and maintenance, long term stewardship and remedial actions.

- The Chaptered Bond Fund is used for site investigation, studies and design, removals, emergency response, remedial actions, CERCLA match, program administration, and operations and maintenance. This account is funded by bond issuance.

3.4.4 Oklahoma

3.4.4.1 Statutory authority

The *Environmental Quality Code* generally establishes which agencies shall have authority over cleanups of State sites.[182] The *Environmental Quality Code* includes: the *Solid Waste Management Act* (enforcement authority); the *Hazardous Waste Management Act* (enforcement authorities); and the *General Regulation and Enforcement,* which defines unmanaged hazardous waste as a nuisance and provides property transfer requirements. The State's *Nuisance Act* defines the liability of property owners and allows the State to hold successor owners accountable for prior releases. The *Hazardous Waste Fund Act* authorizes the cleanup fund, and the *Brownfields Voluntary Redevelopment Act* authorizes the State's brownfields program and provides for property transfer requirements.

3.4.4.2 Voluntary cleanup

Oklahoma has an informal voluntary cleanup program established in 1988. In June of 1996, the Oklahoma *Brownfield Voluntary Redevelopment Act* was passed. Under the program, sites are assessed through negotiation, consent orders, and technical work plans and public comment. The informal cleanup program is open to various participants and can be used for State cleanups as well as a voluntary cleanup program.

3.4.4.3 Brownfields

The Brownfields program is available for any real property. However, other programs may be more applicable to some sites. Incentives for participation include a certificate of completion or certificate of no action necessary. The certificates contain a covenant not to sue from the State, and EPA's assurance that it will not pursue the site under CERCLA. There is also no State sales tax on equipment, machinery, fuel or remedial chemicals charged to cleanup sites under Department of Environmental Quality (DEQ) authority. Incentive payments are provided under the *Quality Jobs Program Act* for industries that locate their principal operation on a remediated site of ten acres or larger. Finally, low interest loans are available to municipalities to clean up brownfields that have the potential to pollute the waters of the State. The participant must reimburse the State's actual costs. Actual costs include all direct costs of DEQ oversight and arrangement for the investigation including, but not limited to, time and travel costs of DEQ personnel, contractor costs, personal protective equipment, document review, and the costs of collecting and analyzing split samples.

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[182] 27A O.S. Supp.1997 section 1-3-1-1(B) & (E6).

3.4.4.4 Liability

The State has the authority to apply standards of liability similar to Superfund's strict, joint and several, and retroactive liability. In cases where public health is in jeopardy, Oklahoma has authority to require cleanup through nuisance laws. Otherwise, the State does not have specific authority to enforce cleanup of pre-RCRA hazardous substances. All non-NPL and non-RCRA cleanups are conducted under Consent Order, either under the informal cleanup program or the *Brownfields Voluntary Remediation Act*.

3.4.4.5 Regulatory tools

Civil penalties may be assessed up to $25,000 per day per hazardous waste violation and $10,000 per violation for any other violation.

3.4.4.6 Cleanup criteria

Cleanup standards are determined by toxicologists that develop site-specific cleanup goals based on current and prospective land use, surrounding population, soil and groundwater considerations. Clean up standards are based on: risk levels of 10^{-6} for carcinogens and a Hazard Index for non-carcinogens; background levels, where they exceed other standards; water quality criteria; and maximum contaminant levels/maximum contaminant level goals. A three tier approach is used: (1) comparison of site data to specific screening levels; (2) development of conservative risk based default cleanup levels using site specific data, the methodology in this case is based on Risk Assessment Guidance for Superfund; and (3) implementation of a site specific risk assessment. Cleanup criteria for voluntary and brownfields sites are generally the same. If the site does not meet screening levels, participants may perform a risk assessment and may also use the three tier system.

3.4.4.7 Property transfer

The State requires disclosure in the County Land Records of any cleanup action that has been conducted under DEQ consent order. All Brownfields certificates must be filed in the County Land Records.

3.4.4.8 Long term stewardship

Oklahoma allows some institutional controls at cleanup sites; however, it prefers self-implementing controls that do not require ongoing oversight. These include, but are not limited to, notices on deeds, zoning and ground water use restrictions, easements, restrictive covenants and reversionary interest. State law authorizes penalties, including conviction for a misdemeanor with up to one year in prison and $1,000 in fines (per violation, per day) in the event that a future owner or operator changes the land use in violation of the land disclosure. The DEQ has a general policy of requiring participants to prove that institutional controls are self implementing or that the participant will be responsible for monitoring and reporting results to the DEQ. The DEQ will assist municipalities in assuring that contaminants left on site are incorporated onto plan maps.

3.4.4.9 Funding

The State uses two funding methods for the application of regulatory tools:

- The Environmental Trust Fund (ETF) is only authorized for CERCLA matches pertaining to oil contamination. The ETF is funded entirely through taxes.

- The Hazardous Waste Fund is authorized for site investigation, CERCLA match, removals, emergency response, grants to local government, and program administration. Transfers of waste fees were the most significant source of funding. Penalties were a minor source.

A summary of the variations that exist in the contaminated sites programs present in the states of Massachusetts, Michigan, California and Oklahoma is attached as Appendix E.

4.0 United Kingdom[183]

4.1 Introduction

Part IIA of the *Environmental Protection Act* 1990 (EPA)[184] (referred to as Part IIA throughout this section of the report) and associated *Contaminated Land Regulations* for various countries within the United Kingdom (England, Scotland and Wales) have been introduced since April 2000. Under Part IIA, regulation will largely take place at the local authorities level, and local authorities have begun work to identify any contaminated land in their areas. For example, as of March 31, 2002, 33 sites had been determined as contaminated land in England under the Part IIA regime. Of these, 11 were designated as "special sites" (where the Environment Agency is the lead regulator) and seven remediation statements (for voluntary clean up) have been agreed. The number of sites determined is relatively low because local authorities have concentrated their resources on producing their inspection strategies. This number is expected to increase as local authorities inspect their areas. The first round of inspections are not expected to finish until about 2006 in some local authority areas.

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[183] The bulk of the information in this section of the report is from the United Kingdom Environment Agency at <http://www.environment-agency.gov.uk>.

[184] Which is introduced by section 57 of the *Environment Act* (1995).

Throughout the U.K. there are thousands of sites which have been contaminated by previous industrial use,[185] for which there is a growing requirement for reclamation and redevelopment. In the past, the problems of contaminated land have been tackled almost exclusively in the context of redevelopment, where there was the objective of economic benefit linked to environmental enhancement. Part IIA of EPA means that local authorities now have a responsibility to proactively inspect their areas and ensure the remediation of any contaminated land.

4.2 Statutory authority

The primary legislation for the remediation of contaminated land is Part IIA of the *Environment Protection Act* 1990 (EPA), and the *Contaminated Land Regulations (England 2000, Wales 2000, Scotland, 2001)* under the EPA.

The regulatory regime set out in Part IIA is based on the following activities:

- Identify the problem;
- Assess the risks;
- Determine the appropriate remediation requirements;
- Consider the costs;
- Establish who should pay; and
- Implementation and remediation.

In addition to the primary legislation, the *Contaminated Land Regulations* and Statutory Guidance set out further requirements which cover:

- Local authority inspection strategies;
- Identification and designation of contaminated land;
- Remediation requirements;
- Exclusion from, and apportionment of liability;

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[185] There is no reliable estimate of the number of contaminated sites in the U.K. or the overall scale of the consequent problem, but the Environment Agency estimates that there could be between 5,000 and 20,000 contaminated sites in England and Wales that may have an impact on human health or the wider environment.

- Cost recovery;
- Categories of land which are to be designated as Special Sites;
- The form and content of remediation notices;
- Appeals;
- Compensation for access; and
- Public remediation registers.

Part IIA provides a statutory definition of contaminated land that is applicable for sites in respect of their current condition and usage. Contaminated land is defined by section 78A(2) of Part IIA of the *Environmental Protection Act* 1990 as:

> any land which appears to the local authority, in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that
>
> (a) significant harm is being caused or there is a significant possibility of such harm being caused; or
>
> (b) pollution of controlled waters is being, or is likely to be caused;…
>
> and in determining whether any land appears to be such land, a local authority shall… act in accordance with guidance issued by the Secretary of State…

Part IIA is designed to deal with contaminated land that poses an unacceptable risk to human health and the environment based on the current use of the land. Land is defined as contaminated only if there is evidence of the presence of a contaminant, a pathway and a receptor that might suffer "significant harm"; there is the "significant possibility of significant harm"; pollution of controlled waters is occurring, or is likely to occur. This is known as a "significant pollutant linkage". The statutory guidance sets out what constitutes "significant harm" and the "significant possibility of significant harm".

Contaminated land as defined under Part IIA is a sub-set of the wider legacy of land affected by contamination, which includes the following:

- Special sites – these are a sub-set of contaminated land sites which are regulated by the Agency under Part IIA. They are defined in detail in the *Contaminated Land (England) Regulations 2000* and include, for example, sites that are affecting or could affect specified water bodies, Ministry of Defence land and sites the Agency regulates under the Integrated Pollution Control and Pollution Prevention and Control Regulation regimes.

- Land affected by contamination – this includes Part IIA land, land where contamination exists but it has not formally been determined by the local authority under Part IIA, or it has been inspected but a significant pollution linkage does not exist.

- Brownfield land – more recently referred to as 'previously-developed' land.[186]

- Derelict land – "land that is so damaged by industrial or other development such that it is incapable of beneficial use without treatment".[187]

- Greenfield land – land that has not previously been developed; its current uses are usually for agriculture, forestry, recreation or nature conservation.

These land classifications are fundamentally different, but not mutually exclusive, and are often used to describe the same piece of land. For example, land can be derelict, brownfield and contaminated at the same time. Greenfield land, in some circumstances, may also be contaminated land.

Part IIA requires the local authority to determine whether particular areas of land are Contaminated Land as defined. It must also consider the status of land under the *Contaminated Land (England) Regulations 2000*, before notifying the outcome of determination to the relevant Agency and certain "relevant persons". Part IIA provides for certain land which meets the definition of contaminated land to be classified as a Special Site (as defined in the *Contaminated Land (England) Regulations 2000*). In these cases, the Agency takes over from the local authority as the enforcing authority. Land cannot be designated as a Special Site unless it has first been identified by the local authority as Contaminated Land.

Under Part IIA, local authorities have responsibility for inspection of the land in their areas to see whether it meets the statutory definition of Contaminated Land. However, the Agency makes an important contribution in the following key areas, as support to local authorities, by:

- provision of information;

- provision of advice in relation to pollution of controlled waters;

- inspection of potential Special Sites as agreed with the local authority; and

- involvement in the formal designation of Contaminated Land as Special Sites, according to Regulations.

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[186] Department of the Environment, *Planning Policy Guidance Note 3 – Housing* (London: Transport and the Regions 2000).
[187] *Survey of Derelict Land in England* (London: Department of the Environment, 1988).

Probably the most significant driver for remediating land affected by contamination is the desire to make use of the land and, in doing so, increase its value. This commonly involves a change in the use of the land, and would normally be controlled by the *Town and Country Planning Act* 1990, enforced by Local Planning Authorities (LPAs). Contamination of the land is a material consideration under the *Town and Country Planning Act*. Planning authorities must consider the possible implications of contamination when developing structure or local plans and when determining individual applications for planning permission. The planning regime has regard for the current and proposed new use of the land when assessing the importance of contamination and determining remediation objectives. Planning permissions are likely to impose conditions on a developer to ensure that any contamination is remediated to a standard suitable for the proposed use.

Remediation objectives, under planning, will relate to the risk associated with the assumed behavior of the occupants of the land. For example, residential gardens are associated with the most sensitive group of society, children up to the age of six, who will play there. A healthy adult population, where the land use is to be industrial or commercial, would normally be considered a less sensitive group. The remediation objectives would reflect this. However, the developer may wish to remediate to a higher standard. Where a site is affected by contamination, but its current use does not pose an unacceptable risk (that is, it does not meet the Part IIA definition of contaminated land), then it will probably be dealt with under planning when the site is to be redeveloped. Alternatively, voluntary remediation may be carried out. The remediation activity itself may require planning permission.

4.3 Activities

4.3.1 Voluntary cleanup

Part IIA allows for voluntary remediation. The "appropriate person" may decide to carry out remediation voluntarily, in which case a remediation statement is agreed. This specifies what is to be done by way of remediation, by whom and by when. The enforcing authority ensures that the agreed actions are carried out. Remediation statements are placed on the public register.

Incentives for voluntary remediation include the desire to increase the value of the land, perhaps with a view to selling it, and the removal of potential liabilities from the company ledger. The value of good, public, environmental credentials to major companies can also be a significant incentive, as can the threat of regulatory action.

4.3.2 Brownfields

As noted previously, brownfield land is referred to as "previously-developed" land. There are various definitions of "previously developed land" in use. Under the "Planning Policy Guidance Note 3 – Housing", such land is generally defined as follows:

> Previously developed land is that which is or was occupied by a permanent structure (excluding agricultural or forestry buildings), and associated fixed surface infrastructure. The definition covers the curtilage [defined as the area of land attached to a building] of the development. Previously developed land may occur in both built-up and rural settings. The definition includes defence buildings and land used for mineral extraction and waste disposal where provision for restoration has not been made through development control procedures.
> The definition excludes land and buildings that are currently in use for agricultural or forestry purposes, and land in built-up areas which has not been developed previously (e.g. parks, recreation grounds, and allotments – even though these areas may contain certain urban features such as paths, pavilions and other buildings). Also excluded is land that was previously developed but where the remains of any structure or activity have blended into the landscape in the process of time (to the extent that it can reasonably be considered as part of the natural surroundings), and where there is a clear reason that could outweigh the re-use of the site – such as its contribution to nature conservation – or it has subsequently been put to an amenity use and cannot be regarded as requiring redevelopment.

The U.K. Government has set a national target for local planning authorities to increase the proportion of new homes built on previously-developed, brownfield land to 60 per cent by 2008. This is to relieve the pressure on greenfield sites and preserve the countryside. Some of these sites may be affected by contamination.

To encourage brownfield development, various grants are available, including the Land Reclamation Program, which is administered in England by English Partnerships. Under certain circumstances, where remediation takes place voluntarily, the disposal of contaminated soil to a licensed landfill may be exempt from landfill tax.

4.3.3 Liability standards

Under Part IIA the responsibility for carrying out the remediation of Contaminated Land rests with parties (either individuals or organizations), identified as appropriate person(s), who:

- Caused or knowingly permitted the substances, which established the significant pollutant linkage, to be present on, in, or under the land in question (belonging to the Class A liability group); and/or

- Are an owner or occupier of the land in question (where no members of the Class A group for a significant pollutant linkage are found and the land is Contaminated Land for reasons other than pollution of controlled waters). They belong to the Class B liability group.

The Agency will consider on a case by case basis:

- The apportionment of costs to be borne by two or more appropriate persons will be made on the basis of liability using the guidance in Chapter D of the Statutory Guidance, taking into account:
    - the degree and nature of responsibility of the appropriate person for the creation, or continued existence, of the circumstances of the identified significant pollutant linkage; and
    - the balance of costs that should be met by national and local taxpayers.
- Whether any appropriate person(s) should have their costs waived or reduced on the basis of guidance provided in Chapter E of the Statutory Guidance.
- The likelihood of any hardship arising from cost recovery on the basis of guidance in Chapter E of the Statutory Guidance. Further guidance can be found in the Agency's Standard on Appropriate Persons and Apportioning Liability (under Part IIA). Due account will be taken by the Agency of any cost recovery policy produced by the local authority.

Where the appropriate person does not agree to undertake voluntary action, or where the enforcing authority is not satisfied that the remediation statement has been complied with, then the enforcing authority can serve a remediation notice on the appropriate person. This requires them to remediate the site in accordance with the detail of the notice.

Retroactive liability imposes liability for actions that occurred prior to the date a cleanup statute or program was enacted. The United Kingdom has retroactive liability under s. 78F(4) wherein if "no person has been found... to bear responsibility… the owner or occupier for the time being of the contaminated land in question is the appropriate person."

Orphan sites are those where an appropriate person cannot be found. In this case, the enforcing authority ensures that the significant pollutant linkage is broken and uses its powers to carry out remediation. The Supplementary Credit Approval scheme is available for local authorities to fund such work. The scheme is managed by the Agency on behalf of the Department for Environment, Food and Rural Affairs (DEFRA). The Agency receives its funding for such work directly from DEFRA.

Where nothing "reasonable" can be specified by way of remediation, having regard for the cost of remediation and the seriousness of the harm or pollution, the enforcing authority cannot serve a notice. A remediation declaration is then produced and placed on the public register stating why no action was taken.

In carrying out any of the above, the enforcing authorities must have regard for the statutory guidance and, for specified actions, they must act in accordance with it.

4.3.4 Cleanup criteria

Fixed, generic and/or other limit values do not play a role in decision making in the U.K.; legislation does not provide for different levels or stringencies of risk assessment. The approach is based on the Source-Pathway-Receptor principle and the need to establish the relationships between these three components. The nature of these relationships controls the degree of risks and decisions on whether the risk is sufficiently serious to warrant action. Remedial actions should be directed at controlling, modifying or destroying these Source-Pathway-Receptor relationships that present unacceptable risks.

A wide variety of different criteria may be applicable in assessing the actual or potential risks associated with land contamination to health and the environment. The U.K. has chosen to develop guideline values rather than standards, for the assessment of risks within the overall policy context of ensuring that land is 'suitable' for its actual or intended use. This allows the incorporation of qualified professional judgment in the interpretation of assessment findings, and for consideration of the nature and magnitude of the risks, technical uncertainty and the practicality and costs of dealing with contamination, when deciding upon the 'acceptability' of risk or of risk estimates in individual cases.

"Data Sheets" have been designed for use in conjunction with the Agency's Internal Guidance on Remediation under Part IIA. The Agency's Internal Guidance describes a procedure for the evaluation and selection of the best practicable technique for remediation when dealing with one or more significant pollutant linkages. Criteria for determining the best practicable technique are summarized as follows:

- Effectiveness
    - Achievement of the standard of remediation (within a remediation package or remediation scheme).
    - Time taken for the standard of remediation to be achieved.

- Reasonableness
    - Cost of remediation is justified by the benefit of breaking any significant pollutant linkage or mitigating the effect of any significant harm or pollution of controlled water that has already occurred.

- Practicability
    - Technical constraints (e.g. availability of power or materials).
    - Site constraints (e.g. area and access).
    - Time constraints.
    - Regulatory constraints (e.g. need to obtain a permit, licence, or operate within the conditions of that permit or licence).
    - Interaction with any other works already proposed, in progress, or completed.
    - Adverse environmental impacts.

- Durability
    - The period of time over which the effectiveness of remediation will need to be maintained.

- Others
    - Track record.
    - Technological and scientific advances.
    - Implementation in accordance with good practice and quality assurance procedures.

Data Sheets have been structured to group together relevant information about a specified remedial treatment action that addresses the above criteria. The information is largely generic and therefore aims to set out principles for evaluating the technique rather than providing a set of 'hard and fast rules'. Any final decision on the cost, applicability, and effectiveness of a remedial treatment action will depend on the site-specific circumstances. Data Sheets have been prepared for biopiles, windrow turning, landfarming, Monitored Natural Attenuation, and bioventing.

4.3.5 Regulatory tools

Local authorities and the Agency jointly regulate Part IIA. The local authority is the lead regulator and has sole responsibility for identifying and determining contaminated land. Once a significant pollutant linkage has been identified and the local authority has formally determined the site as contaminated land, the enforcing authority has a statutory duty to require its remediation. This can involve treating, altering or removing the contaminant, breaking the pathway or altering the behavior of the receptor in some way.

The local authority will be the enforcing authority for all sites except "special sites". The principal regulators for Part IIA are the local authorities. The Agency also has an important complementary regulatory role under the regime including:

- The provision of information and advice, including site specific guidance, to local authorities;

- The regulation of Special Sites; and

- Preparation of a national report on the state of contaminated land.

If a local authority, based on the assessment of the available information, decides that a particular area of land is Contaminated Land, it will prepare a formal record of the determination and the grounds upon which it is based. The local authority is required under s. 78B(3) to notify the Agency of this determination together with other "relevant persons". The authority is also required under s. 78C(3) to seek the advice of the Agency, and have regard to the response, before making a formal decision about designation of that land as a Special Site.

Once it has been formally determined that land is Contaminated Land and designated as a Special Site the enforcing authority (Agency) has a duty to ensure that appropriate remediation is carried out through:

- Agreed alternative options for achieving necessary remediation, set out in a Remediation Statement; or

- The preparation and service of a Remediation Notice.

Where the local authority is the enforcing authority the Agency has a power to provide the authority with site-specific guidance and the authority is required to consult with the Agency on specific issues concerning water pollution. The enforcing authority is precluded from serving a Remediation Notice if it is satisfied that appropriate remediation is being, or will be, done without a Notice being served. The authority is also precluded from serving a Notice if certain other statutory regimes apply (s.78YB), there is nothing to be done by way of remediation that is reasonable ((s.78H5(a)), or if it would be serving the Notice on itself ((s.78H5(c)). Therefore, the enforcing authority needs to consider the most appropriate mechanism for ensuring that the necessary remediation is carried out. In preparing a Remediation Notice, the enforcing authority is obliged to consider the reasonableness of actions to be required under the Notice, based on the cost which is likely to be involved and the seriousness of the harm or pollution of controlled waters.

The role of Agency staff in determining and implementing appropriate remediation for Special Sites is based on the following specific activities:

- Prepare for consultation on remediation;

- Identify appropriate persons;

- Consult with relevant persons about remediation;

- Decide what needs to be done by way of remediation;

- Determine liability of appropriate persons and apportion costs;

- Deal with cases of voluntary remediation (through a Remediation Statement);
- Prepare and serve a Remediation Notice;

- Carry out remediation and recover costs;

- Prepare and publish a Remediation Declaration;

- Record details of remediation on the public register; and

- Deal with appeals on remediation and registers.

Where a change in use of a site is planned, as for example where redevelopment is planned, any necessary remedial action would be carried out under planning and development control rather than under the Part IIA regime. Enforcement action under Part IIA may also not be applicable where authorizations are in place under other legislation, such as Integrated Pollution Control (Part I EPA), the Waste Management Licensing regime (Part II EPA), or where other legislation such as that to prevent pollution of controlled waters is relevant.

Where there is sufficient evidence, the Agency will normally prosecute failure to comply or to comply adequately with formal remedial requirements. It is unacceptable to ignore remedial requirements and unfair to those who do take action to comply. The existing law gives the courts considerable scope to punish offenders and to deter others. Unlimited fines and, in some cases, imprisonment may be imposed by the higher courts. The Agency will continue to raise the awareness of the courts to the gravity of many environmental offences and will encourage them to make full use of their powers. Examples of penalties presently available to the courts for certain environmental offences are:

- Magistrates' Court: up to 6 months imprisonment and/or £20,000 fine; and
- Crown Court: up to 5 years imprisonment and/or an unlimited fine.

If at any point, the Agency is not satisfied with the nature and progress of any works specified in the Notice, the Agency may seek to prosecute the appropriate person(s) on the grounds that they have failed to comply with the Notice.

Under s.78N and s.78P of Part IIA the Agency has the power to undertake the necessary remediation itself and where appropriate to recover the cost of such works from the appropriate person(s). The Agency can use this power:

i. where it is not otherwise precluded from serving a Remediation Notice because of the applicability of s78YB only, and

ii. under the following circumstances:

   - The Agency considers that the identified significant pollutant linkage poses an imminent danger of serious harm or pollution of controlled waters.
   - The Agency has a written agreement with the appropriate person(s) to do the work and to recover the cost of so doing.
   - The Agency considers that the appropriate person(s) has not complied with the terms of a Remediation Notice.

- The Agency considers it would cause hardship or be unable to comply with the principles of cost recovery set out in Chapter E of the Statutory Guidance for one or more appropriate person(s) and is therefore precluded from serving a Remediation Notice.

- The Agency considers the identified significant pollutant linkages are orphan linkages (i.e. no appropriate person(s) have been found to be liable for the necessary works).

4.3.6 Property transfer

No specific legislated provisions regarding the property transfer of contaminated land were identified in this review. In June of 2001 the U.K. Law Society issued a "warning card" to all solicitors on the risks when advising clients on property deals involving contaminated land. The "warning card" says: "In every transaction you must consider whether contamination is an issue".[188]

The National Land Use Database (NLUD) aims to provide a record of land use in England. The NLUD is under development and at present data are available for previously developed land. The database records the amount of previously developed land and buildings that are unused or may be available for redevelopment. Contamination is not recorded, but previous use may indicate the potential for contamination. A site might have had a succession of uses that may well have included one or more potential issues related to contamination.

There are little nationally consistent data on actual contamination of land, beyond that which Part IIA is beginning to provide.

4.3.7 Long term stewardship

During the course of works required by the Notice, the Agency will review progress to establish whether the requirements are being met. This may include:

- On-going consultation with the appropriate person(s) undertaking the works.
- A review of documentation provided by the appropriate person(s) covering the initiation and completion of discrete phases of remediation.
- Site inspections as appropriate.
- Information provided by Agency Officers and other regulatory officials undertaking their duties, for example, those monitoring the operation of any Remedial Treatment Action.

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[188] United Kingdom Environmental Law Association, *Contaminated Land, Avoiding the Pitfalls*, (20 November 2001).

The Agency may consider whether the works are:

- Progressing in a manner consistent with the Notice.
- Taking proper account of any changes in the circumstances of the land in question, for example, the identification of any new significant pollutant linkage or a clarification in understanding of an existing significant pollutant linkage that occurs from information collected during the course of such works.

A summary of the *Environmental Protection Act* Part IIA regime for contaminated land in the United Kingdom is attached as Appendix F.

5.0 Netherlands[189]

5.1 Introduction

Soil pollution became a major political issue in the Netherlands in 1980 as a result of a severe case of contamination near Rotterdam. Public response was massive, and many citizens were afraid that contamination might exist in the soil under their homes. The National Ministry of Housing, Physical Planning and Environment established the *Soil Cleanup Interim Act* in 1983, resulting in national soil testing.[190] Every province conducts annual investigations on suspected soil contamination.

In the early 1980s, legislation included strict remediation standards. Properties were classified according to three contamination levels:

A-level: Considered clean with contaminants at or below background levels.

B-level: Required additional investigation (some contamination suspected).

C-level: Required complete cleanup (some contamination present).

If a site was rated A or B, the amount of cleanup would vary depending on the land-use at that site. C-level ratings always required a complete cleanup.

An important change of course in soil remediation policy was decided in 1997, once people started realizing that bottlenecks were occurring in the soil remediation operation. Huge costs were seen as an important causal factor. Bottlenecks in tackling soil decontamination also entailed hold-ups in other activities; there was too big an obstacle to making contaminated sites suitable for new uses. With the choice in 1997 for

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[189] The information for this section of the report is largely from the Ministry of Housing, Spatial Planning and the Environment (VROM), at: <http://www.vrom.nl/international/>, click "Domestic/Environment/Soil Policy/Publications". Much of the information available on this website is dated, with the most recent updates dating back to the 1997-2000 period.

[190] Wilma Visser, *Contaminated Land Policies in Some Industrialized Countries*. (the Hague: Technical Soil Protection Committee, 1994).

"function-oriented" remediation a major obstacle to tackling contaminated sites was removed. The new remediation goal focused on making a site suitable for current or planned use. A new policy on soil remediation (called the BEVER process, based on the Dutch abbreviation) was developed, which elaborates on the practical details of "function-oriented" remediation.

The federal government designates approximately 175 million Guilders a year for cleanups. Hundreds of projects compete for those funds across the country. Under the new soil protection law, the National Ministry funds up to 90% of the cleanup for projects that cost more than 10 million Guilders and the local governments contribute the remaining 10%. Because it is difficult for the government to delegate oversight, it maintains a strong interest in the decisions made on such projects. Although Cities work with district councils to develop cleanup plans, ultimately the National Ministry makes the final decision because it controls the funding.

The new remediation approach and the additional deployment of national resources led, assuming the maintenance of the share of private financing, to a doubling of remediation capacity, and therefore a reduction by half of the remediation period from approximately 80 years to approximately 40 years. An intensification of private investments will make it possible to shorten the soil remediation operation further. The objective is to bring the soil pollution problem in the Netherlands under control within approximately 25 years.[191]

5.2 Statutory authority

Prevention of soil pollution in the Netherlands is based on the *Soil Protection Act* of 1994. The *Soil Protection Act* forms one of the most important legislative measures for the protection of the soil. It has a dual purpose, namely to prevent pollution of the soil and to give rules for the decontamination of (severely) polluted soil.

The *Soil Protection Act* connects all cleanup levels with future land uses.[192] Under the 1994 Act, the "C-level" of contamination listed above (i.e. some contamination present – complete cleanup required) has been revised to include an intermediate standard that does not automatically require full remediation to background levels.

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[191] 1999-2000, 25 411 *Interdepartmental policy review: soil remediation No. 7 Letter From The Minister of Housing, Spatial Planning and The Environment* (Ministry of Housing, Spatial Planning and the Environment, 1999-2000); online: Netherlands Ministry of Housing, Spatial Planning and the Environment <http://www2.minvrom.nl/Docs/internationaal/briefVTNZPronk.pdf>.

[192] The policy was changed from requiring complete cleanups to allowing for partial cleanups that meet certain criteria. Obviously, this approach is considerably less expensive. It had been Amsterdam's policy to assess land use and cleanup on a case by case basis for several years before the law was changed. This process was conducted without violating the federal law because the city communicated frequently with the federal ministry and sought special permits and approvals stating that the city's actions were within the boundaries of the law. Although there was conflict with the ministry over the cleanup levels from time to time, national regulations were never violated.

The cleanup of soil pollution in the Netherlands is a multi-disciplined venture that covers many levels of government. The Ministry of Housing, Spatial Planning and the Environment (VROM) is responsible for defining general soil policy. The *Soil Protection Act*, and instruments based on the Act such as General Administrative Orders, soil quality objectives and procedures for estimating *site-specific risks*, are defined by the Ministry. The National Institute of Public Health and Environmental Protection provides the scientific basis for soil quality objectives and risk assessment procedures. The Technical Committee on Soil Protection advises the Minister on the implementation of technical and scientifically based instruments in soil protection policy. The development of instruments such as quality objectives takes place in close co-operation with all relevant parties to ensure that they will be suitable for use and widely accepted. The local authorities, provinces and municipalities all participate in deciding how best to deal with specific contaminated sites.

5.3 Activities

5.3.1 Voluntary cleanup

In March 1997, the Dutch government reported a number of bottlenecks related to the cleanup of contaminated sites.[193] With regard to "voluntary cleanup" it was stated in section 2 of the report:

> The support for voluntary private cleanup of polluted sites is limited and crumbling away. This support is under pressure due to the generally high cost of cleanup, from which it is virtually impossible to achieve any economic returns. Postponing cleanup in this situation is worthwhile because the legal instruments the state has and the competent authorities are not effective enough. Postponement is also based on the expectation that new cleanup techniques will make cleanup cheaper in the future and/or regulations governing the cleanup objective ('how clean to clean up') will in due course be relaxed. In general, cleanup policy is seen as unclear and ideas on the degree of liberty in regard to the cleanup result to be achieved are incorrect. Added to this, companies and other private cleanup contractors feel that the authorities apply double standards in the sense that they are less strict for themselves in regard to selecting the cleanup objective for a site and the time it will be cleaned up. Finally, the authority and business people see the problem differently.

A number of incentives have been described by the Ministry of Housing, Spatial Planning and the Environment (VROM) to encourage the cleanup of contaminated soil.
One such incentive is a soil remediation fund. The primary goal of a remediation fund is to bring about acceleration in the tackling of remediation. The aim of this acceleration is also to bring to a halt the crumbling support for private cleanup operations and to reduce pressure for financing these operations from public funds. A soil remediation fund could

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[193] *Good ground for growth: new incentives for soil remediation*, Ministry of Housing, Spatial Planning and the Environment, (1997), online: Netherlands Ministry of Housing, Spatial Planning and the Environment <http://www2.vrom.nl/Docs/internationaal/ground.pdf>.

make public funds more effective sooner by pre-financing monies that will be available in the future as well as other funds for soil remediation. In addition, it could provide low interest loans through interest subsidies or acknowledgement as an ethical investment fund, for example. Financial institutions could be brought in to provide the loans on a commercial basis and they themselves would provide the funding.

Various possibilities in the tax sphere for encouraging soil remediation have been examined generally and tested for their ability to fit into the present tax system. Two possibilities hold prospects:

- An additional condition to the present facility for forming fiscal reserves for cleanup operations by companies which allows reserves to be formed sooner; and
- Expansion - where necessary on conditions - of the ethical investment scheme with soil remediation projects.

Two other fiscal options, reducing the value added tax rate for soil remediation activities and a zoning levy on developing clean sites, are already being considered.

Support for private cleanup operations could be improved by setting up a soil remediation development corporation (called BOSOM), which would act as intermediary between those with a problem, contractors and authorities. By combining knowledge and financial resources and clustering the tackling of instances of pollution it will be possible to achieve substantial cost benefits. Moreover, a BOSOM could take over administrative burdens from the party carrying out a cleanup operation.

5.3.2 Brownfields

Urban brownfield sites in the Netherlands are mostly industrial sites, which have fallen into disuse.[194] They are formerly occupied by industries which have become obsolete or undergone radical change, such as textile, mining, metals, tobacco, paint and printing industries, shipyards and (obsolete) dockyards, and (former) gasworks.[195] After a period of prosperity, these activities have become obsolete. The needs of present generation's old town centres is generally quite small, but their location and situation can have a considerable negative spin-off.

Solving problems related to urban brownfield sites in the Netherlands requires an integrated approach. This means that efforts are made to produce a coherent solution drawing from various policy sectors and from different administrative levels. The result is a veritable policy patchwork quilt, in which central government, the provinces and the municipalities have very different responsibilities and tasks. Central government policy concerning the restructuring of towns is a matter for, amongst others, the Ministry of Housing, Spatial Planning and the Environment (VROM). Urban regeneration policy, which originated from housing and spatial planning policy, is now as well supported by the environmental policy. The Ministry of Transport, Public Works and Water Management (V&W), the Ministry of Economic Affairs (EZ) and the Ministry of the Interior (BIZA) now also greatly contribute. Their policies are set out in a number of policy documents, many of which are drawn up jointly. This helps foster integration in policy development and implementation.

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[194] The Organization for Economic Co-operation and Development (OECD) defines urban brownfield sites as "vacant, derelict, underused lots in urban areas, with actual soil contamination or risk of soil contamination".

[195] According to a recent study commissioned by the Ministry of Economic Affairs, between 9,000 and 11,000 hectares of industrial sites are obsolete in the Netherlands.

The main national policy guidelines relevant for urban brownfield sites are set out in:

- The policy document *Housing in the 1990s* (VROM, 1989);
- The *Supplement to the Fourth Policy Document on Spatial Planning* (referred to as 'VINEX' -VROM, 1993);
- VINEX update (VROM and Ministry of General Affairs, 1997);
- The *National Environmental Policy Plan 3* (VROM, EZ, LNV 5 , V&W, Ministry of the Interior and Ministry of Finance);
- *Space for the regions* (EZ, 1995);
- *Second Transport Structure Plan* (V&W and VROM, 1990).

The policy set out in these policy documents is elaborated not only in further policy documents and legislation, but also in a variety of financial schemes and implementation programs. The policy related to "cleanup levels" in contaminated soil is highlighted below.

Urban brownfield sites in the Netherlands are characterized by various environmental problems. Soil contamination is generally the most severe problem. Six trends have been designated which form this policy renewal:

- Integrated rather than sectoral approach;
- Function-oriented rather than multifunctional clean-up;
- Process-oriented rather than project-oriented;
- Decentralized rather than centralized;
- Private sector rather than public sector;
- Sharing values rather than imposing values.

The intention is that the remediation of land already contaminated from now on will be adapted to the future use of the soil - known as "function-oriented" remediation. This means that the ambition to restore the "multifunctionality" of the soil, as had hitherto been the objective, in such cases is abandoned. This will allow more rapid progress to be made in cleaning up contaminated land in an environmentally sound manner while keeping down the costs. In addition, the government intends to take financial, legal and fiscal measures, which make it more attractive for the private sector to invest in remediation of contaminated land.

The main incentives are those related to economic issues and funding as discussed below. There are several government grants schemes to cover the shortfall in funding for redevelopment projects.[196] Many of these are associated with the various policy programs for urban brownfields listed above. A number of other specific sources of funding are also available. These are generally linked to a particular characteristic or component of the project concerned.[197] Schemes such as StiREA[198] and subsidies granted under the major cities policy are intended specifically to promote commercial activity in cities. A single project can often obtain funding from a number of different financial schemes, which relate to different aspects of the plan.

Priorities for tackling the cleanup of contaminated sites based on environmental criteria often do not correspond with the desired planning for the development of urban brownfield sites. In order to resolve this problem, municipalities can, with the agreement of the province, start projects in advance of *Soil Protection Act* funds being made available if they cover the initial financing. This possibility is limited however, because no guarantees can be given in advance about the size of future budgets and grants. A decision has been taken, within the context of the national soil clean-up policy, to substantially increase public spending on contaminated land. These extra resources, to be provided within the context of the *Soil Protection Act*, can be allocated integrally, subject to current priorities and the contributions made by other departments and private organizations, and provided that the contamination involved is severe and environmentally urgent or has a high societal priority.

In the Netherlands, the government, together with other public and private partners, recently signed a covenant for the rehabilitation of active polluted industrial sites. This covenant provides for considerable subsidies and can be compared with the *Resource Conservation and Recovery Act* (RCRA or Superfund) in the U.S., which also deals with active sites. With regard to brownfields, this is an important difference, as brownfields are normally abandoned sites. However, in the U.S., according to the new *Small Business*

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[196] VROM: *Urban Brownfields: Restructuring and urban economic development*, (Ministry of Housing, Spatial Planning and the Environment, 1988), online: Netherlands Ministry of Housing, Spatial Planning and the Environment <http://www2.minvrom.nl/Docs/internationaal/urban.pdf>.

[197] For example the Intrafonds of the Ministry of Transport, Public Works and Water Management, and the VINEX covenants (approximately NLG 900 million budgeted for 1995-2005 for contaminated land).

[198] 'Room for Economic Activity' Incentive Scheme. A sum of NLG 75 million is available under StiREA over the period 1996-1999 for the Netherlands as a whole, of which one-third for the four large cities. A sum of NLG 3 million per project is available for restructuring and NLG 7.5 million for new projects.

Liability Relief and Brownfields Revitalization Act, a brownfield site does not necessarily have to be abandoned.[199]

5.3.3 Liability standards

The *Soil Protection Act* includes provisions relating to the costs of cleaning up contaminated land.[200] Current legislation requires that the polluter should pay for the cost of cleanup. Where a site is severely contaminated and is deemed to be environmentally urgent, the cleanup is assumed in principle to be the responsibility of the parties concerned. It is firstly the party who caused the contamination, and otherwise the owner or leaseholder, who is responsible for investigating the problem, drawing up a remediation plan and carrying out the necessary measures (and who also bears the costs).[201] If the party who caused the problem or the owner or leaseholder refuses to carry out the necessary remedial work, the government can resort to enforcement measures. The government will act as safety net and carry out the work itself only where the clean-up is not performed or funded by a third party and the case is environmentally urgent.

If soil contamination occurred during and after 1987 (i.e. new contaminated sites), a total cleanup should be performed. For old sites (i.e. contaminated before 1987) different cleanup objectives are applied, depending on circumstances. The management strategy adopted depends on local circumstances having regard to the prevention of contaminant dispersion, the reduction of site-specific risks, and the improvement of soil quality. Social and economic factors also influence the way soil contamination is managed. These are discussed at 5.3.4 below.

In cases of so-called innocent owners, the cleanup is paid for by the authorities using public money. In some cases it is a public body which caused the contamination or which owns the land, and which therefore has to bear the costs. The provinces are responsible for coordinating soil clean-up activities under the *Soil Protection Act*. In their soil clean-up program the provinces indicate which sites will be tackled from the government budget each year. However, the number of sites requiring cleanup far exceeds the available budget. In practice this means that only urgent projects are tackled quickly under the *Soil Protection Act*.

5.3.4 Cleanup criteria

Cleanup criteria in the Netherlands are based on both scientific and policy considerations as described below.

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[199] *International Brownfields Case Study: Westergasfabriek, Amsterdam, Netherlands*, online: U.S. Environmental Protection Agency <http://www.epa.gov/international/urban/brownfields/westergas.html>.

[200] A total of about NLG 500 million is available each year.

[201] Agreements in this regard have been made between industry and government for industrial sites currently in use.

5.3.4.1 Scientific considerations

Risk-based soil quality objectives are an important instrument in Dutch soil policy, especially in relation to the cleanup of contaminated soils. Soil remediation policy uses "target values", "intervention values", and "indicative levels for serious contamination". The point of departure in setting standards for environmental policy as a whole is based on the risks involved.[202] The three types of cleanup standards are briefly described below.
The target values indicate the level at which there is a sustainable soil quality. In terms of curative policy this means that the target values indicate the level that has to be achieved to fully recover the functional properties of the soil for humans and plant and animal life. Besides this the target values give an indication of the benchmark for environmental quality in the long term on the assumption of negligible risks to the ecosystem.

Soil remediation intervention values indicate when the functional properties of the soil for humans, plant and animal life, is seriously impaired or threatened. They are representative of the level of contamination above which there is a serious case of soil contamination. The soil remediation intervention values are based on extensive studies of the National Institute for Public Health and Environmental Protection (RIVM)[203] of both human and ecotoxicological effects of soil contaminants.

Human toxicological effects have been quantified in the form of concentrations in the soil above which maximum permissible risk for humans may be exceeded. For non-carcinogenic substances this corresponds to the Tolerable Daily Intake. For carcinogenic substances this is based on an additional chance of tumor incidence of 10^{-4} for lifetime exposure. It is assumed here that all exposure routes are operational.

Ecotoxicological effects are quantified in the form of concentrations in the soil above which 50 percent of the potentially present species and processes may experience negative effects. The ultimate intervention values for soil and sediment are based on an integration of the human and ecotoxicological effects. In principle the most critical effects are definitive.

The intervention values for groundwater are not based on any separate risk evaluation with regard to the presence of contaminants in groundwater, but are derived from the values for soil/sediment.

Indicative levels for serious contamination have been given for some substances, but not all. The indicative levels are much more uncertain than the intervention levels. Hence the status of the indicative levels is not the same as that of the intervention levels. A higher or lower level than the indicative level therefore does not have immediate consequences with reference to a decision being taken on the gravity of a case of contamination by the competent authority. The competent authority should take into account other considerations besides the indicative levels, in deciding whether or not there is a case of serious contamination. The competent authority can indicate this when providing reasons for its decision. For example, the competent authority may require that:

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[202] This strategy is set forth in the document *Premises for Risk Management [Omgaan met risico's]. The risk-based approach in environmental policy* (Ministry of Housing, Spatial Planning and the Environment (VROM), Lower House of Parliament, parliamentary proceedings 1988-1989, 21 137, no. 5).

[203] RIVM, report numbers 725201001 to 725201008 inclusive, report numbers 715810004, 715810008 to 715810010 inclusive, report numbers 711701003 to 711701005 inclusive.

- The actual risks be determined;
- A further investigation into the potential risks of the substance in question be conducted; or
- It be ascertained whether there is a case of serious contamination and the need for urgent remediation with reference to other substances.

Target values and intervention values have been established for numerous substances for soil and groundwater.[204] From a site investigation of the contaminated soil, the following implications can be ascertained:

- Concentration less than Target Value (*clean soil*) means no restrictions.
- Concentration greater than Target Value and less than Intervention Value (*slightly contaminated soil*) means (minor) restrictions can be imposed on soil use. If target values are met, the soil is considered clean or multifunctional.
- Concentration greater than Intervention Value means the contamination is classified as serious. This means that in principle remediation will be necessary; the urgency of remediation has to be determined.

The implications of target values and intervention values are shown schematically below:[205]

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[204] *The Circular on target values and intervention values for soil remediation, ANNEXES,* (Ministry of Housing, Spatial Planning and the Environment, 2000), online: Netherlands Ministry of Housing, Spatial Planning and the Environment <http://www2.vrom.nl/Docs/internationaal/annexS_12000.pdf>. Four annexes belong to this circular:

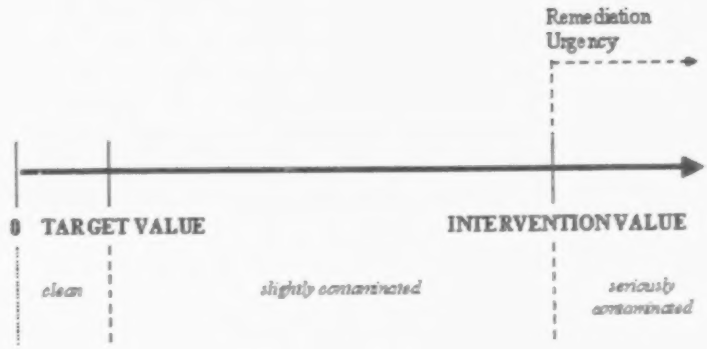
· Annex A deals with the target values, the soil remediation intervention values and the indicative levels for serious contamination;

· Annex B contains the measurement and analysis regulations for soil/sediment and groundwater for the substances listed in annex A;

· Annex C gives the data required for determining the remediation urgency and the remediation deadline for the substances in part A;

· Annex D provides a guideline for dealing with substances for which there are no standards.

[205] *Contaminated Land Approaches in 16 European Countries*, The Netherlands, 2000, online: CLARINET, the Contaminated Land Rehabilitation Network for Environmental Technologies in Europe <http://www.clarinet.at/policy>.



If there is a case of serious soil contamination the competent authority has to decide whether remediation is urgent (*Soil Protection Act* section 36 and section 37). The determining factors are the actual risks for humans and ecosystems at the site of the case of the contamination as well as the risks of dispersion. These depend very much on the use of the contaminated site.[206]

If the soil contamination was caused prior to January 1, 1987 (and is being assessed in a different context) it has to be established whether there is an obligation to clean up the soil by virtue of a valid permit regulation or statutory regulation. Examples are the *Environmental Management Act*, the *Housing Act*, etc. Such legislation has priority over the remediation regulations of the *Soil Protection Act*. However, if on the basis of the other Acts referred to it is decided not to clean up or not to do so in full, the remediation arrangements in the *Soil Protection Act* serve as a last resort. A coordinated effort with other legislative arrangements is required.[207]

For soil contamination caused after January 1, 1987 the duty of care applies (section 13 of the *Soil Protection Act*). Cases of this kind must be cleaned up as quickly as possible, irrespective of the concentrations encountered and the risks of the pollutants. Determining the gravity of the contamination, the urgency of remediation, and the remediation deadline do not play any role here. Remediation is carried out to restore the soil to the old condition using state of the art technology on the basis of the ALARA principle (as low as reasonably achievable). Otherwise section 27, subsection 2 of the *Soil Pollution Act* offers the competent authority the possibility of defining more closely the details of the measures to be taken.

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[206] Annex 5 of the *Circular on the Assessment and Coordination of the Soil Protection Act Remediation Regulations* (Netherlands Government Gazette 1998, no. 4) describes the system for determining the urgency of remediation.

[207] *Ibid.*

5.3.4.2 Policy considerations

The VROM Soil Policy working committee has developed two policies, which make function-oriented remediation (geared to present or desired use) formally possible.[208] A systematic distinction is drawn in cleanup measures between mobile and stationary pollution. Present formal policy on cleanup as set out in the cleanup regulations of the *Soil Protection Act* is based on the complete removal of the soil pollution. Contrary to present policy, as much mobile pollution will be removed as is cost effectively possible. In the case of stationary pollution, only some of the pollution will be removed.

In the case of the first policy (based on environmental returns), the competent authority will appraise the different intermediate alternatives on the basis of environmental returns and cost effectiveness, with the highest possible soil quality being the main focus. In practice this means that, for example, the owner of a polluted industrial site will not need to remove all the pollution, but must remove as much as can be removed without increasing costs disproportionately in order to create the possibility for more sensitive functions like offices, homes without gardens or recreation facilities without further cleanup being required. Application of the environmental returns concept could result in more pollution being removed than is deemed necessary by the initiator of the cleanup operation and to more of his financial resources being taken up.

With the second policy alternative (the returns on use), the appraisal process is placed with the initiator. The soil must as a minimum be cleaned up to the minimum required from environmental considerations. Further remediation is optional and will depend on the interests of the party carrying out the cleanup operation to create more potential uses and the cost involved. The role of the competent authority is to examine whether the minimum requirement from the environmental viewpoint is being met and mainly to facilitate. This policy alternative means in practice that, for example, the owner of a polluted industrial site will have as much pollution removed that the environmental risks appertaining to the present use of the soil are permissible again, unless he deems it in his interests to remove more pollution, for example, to raise the sale value of the site. If at a later stage the soil is to be used for a more sensitive function, it will have to be cleaned up again.

Both policy alternatives provide scope for substantially lowering the cost of remediation and can contribute to reducing stagnation and increasing support for remediation. The two alternatives developed and the reduction of the problem employed make it possible to complete the cleanup operation roughly speaking within two generations, based on the present annual use of resources. At the same time, completion should not be interpreted in absolute terms. Pollution will remain in the soil to a greater or lesser degree, albeit in concentrations that can still be deemed acceptable from the environmental viewpoint. These residual concentrations may in the future lead to supplementary cleanup if the function of the site changes, and hence give rise to costs that could have been avoided if cleanup had been more radical in the first place. These residual concentrations also place some restriction on the management of the soil (for example, in relation to possible earthmoving operations).

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[208] *Supra* note 193.

5.3.5 Regulatory tools

Under section 30(1) of the *Soil Protection Act*:

> If as the result of an unusual event the soil is or threatens to be seriously contaminated or impaired, the Provincial Executive shall forthwith take such measures as it deems necessary in order to remove and remedy as much as possible the contamination or impairment and the direct consequences thereof.

Under section 43(3) of the *Soil Protection Act* the Provincial executive may order the person whose acts have caused a site for investigation or a seriously contaminated site, or the owner or long leaseholder of the property on which the contamination is situated or the consequences thereof occur, to carry out site assessment in a prescribed manner indicated or, in the event of serious contamination, to carry out remedial investigation or to take remedial action.

Enforcement of the rules for contaminated excavated soil is differentiated according to the degree of contamination. In the case of lightly contaminated excavated soil, the enforcing body will focus its attention mainly on the final destination. In the case of seriously contaminated excavated soil the emphasis will be on enforcing the entire chain - from excavation to final destination - with specific checks being made on any incorrect qualifying of a batch of excavated soil. [209]

The Act also allows for the indemnification of damages for an investigation or from a section 30 order (section 73 and 74). The state may also recover investigation and remediation costs (section 75).

5.3.6 Long term stewardship[210]

After completion of the remediation operations, care activities are kept as limited as possible in terms of extent, intensity and number. This applies both to the topsoil and the subsoil. There are two categories of care activities: physical care activities which concentrate on the isolation, control and monitoring of the remaining pollution on the one hand, and organizational care activities which concentrate on the identification of the remaining pollution on the other hand. In all cases of remaining pollution, the signposting of the situation is obligatory for all parties with either direct or indirect involvement. This can be done by means of registration in the land register as well as with soil information systems. The information must also include any restrictions on use, monitoring and checks on diffusion or possible later pollution.

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[209] *How To Deal With Contaminated Excavated Soil* (Ministry of Housing, Spatial Planning and the Environment, 1999), online: Netherlands Ministry of Housing, Spatial Planning and the Environment <http://www2.vrom.nl/Docs/internationaal/Infoleaflet.pdf>.

[210] *Supra* note 191.

Care is required as long as pollution remains after remediation operations and it can therefore be permanent. In addition, care activities only make a small contribution, if any, to the environmental and social benefits of soil remediation. Care activities involve considerable cost and it is difficult to maintain them, particularly in the long term. In short, physical follow-up to remediation operations is long-lasting, labour-intensive, organizationally complex, uneconomic and expensive and it should therefore be limited as much as possible.

There is a link between the remediation measures taken and the care activities required thereafter. In short, the more pollution is removed, the simpler the associated care activities are later and vice versa. The most intensive care is required by the classic isolation, control and monitoring measures. Care activities only become unnecessary if the pollution has been completely removed subsequent to remediation.

It has not been ascertained if legal instruments have been imposed. The 1997 VROM report titled *Good Ground for Growth – New Incentives for Soil Remediation* discussed many initiatives. With regard to legal instruments, it was stated that regulations governing selling and ceasing operations could provide the necessary clarity for the parties concerned as regards liability for soil pollution, among other things, in relation to land transactions. Reinforcing the instruments in regard to orders and cost recovery through an administrative right of recovery for the government, for example, could reduce present uncertainties and restrictions and increase the effectiveness of these instruments. In addition, there is cause for increasing the only limited possibility for owners to recover cleanup costs from predecessors.[211]

6.0 Analysis

The review of regulatory systems in other jurisdictions revealed some elements that are common with Alberta's system of contaminated land management. Most significantly, all jurisdictions reviewed rely on the "polluter pays" principle as an important element of their regulatory systems. Additionally, all jurisdictions reviewed, except one, provide for retrospective application of their legislation in relation to contaminated land.

Analysis of the jurisdictions reviewed for this project show some trends in management of contaminated land. With the exception of the Netherlands, all jurisdictions have in place or are building regulatory systems that recognize limited resources on the part of regulators. This is particularly evident in the American jurisdictions and British Columbia's system, which make provisions for various fees to be charged by regulators to persons undertaking contaminated site remediation.

Most jurisdictions have taken steps to increase public accessibility of information related to land contamination, usually in the form of a separate site registry or through registration of notices in the applicable land registry system. Greater access to and transparency of environmental information about land is seen as a means of increasing public knowledge and encouraging due diligence by parties involved in land transactions.

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[211] *Supra* note 193.

Many jurisdictions have either adopted or are moving to facilitating use of risk management to deal with land contamination. In British Columbia, Ontario and Quebec, risk management is permitted with some forms of control to ensure clear knowledge of the condition of sites under risk management (usually a requirement for some form of environmental site assessment report prior to approval of risk management) and public awareness of the use of risk management at specific sites.

Remediation of contaminated land is increasingly being tied to anticipated land use post-remediation. In many of the jurisdictions reviewed, changes in land use trigger regulatory duties, ranging from requirements to provide information to duties to undertake new environmental site assessments. British Columbia, Ontario and Quebec all link their contaminated land management systems to land use planning requirements, often with requirements that certain land use authorizations not be granted without certain environmental conditions being met.

Exemptions from liability are often tied to a lack of involvement in causing contamination or to the exercise of due diligence with respect to one's involvement with a site and contamination on that site. Where such exemptions are provided in a regulatory system, they are clearly stated in either the statute or regulation with minimal levels of discretion, if any, given to the regulator. In the Canadian jurisdictions reviewed, there is usually little or no exemption from liability provided to polluters. It is also apparent from the review that some provinces are examining the feasibility of limiting regulatory liability on a prospective or "go forward" basis for sites that meet current remediation objectives.

Every jurisdiction reviewed, other than California, provides for retroactive application of its legislation and retroactive liability for contamination. There are not clear trends regarding the use of joint and several liability versus proportional liability, although most of the Canadian jurisdictions reviewed use a combination of the two approaches. Ontario, British Columbia and Alberta all use joint and several liability as the basic default approach, with British Columbia and Alberta having the ability to allocate liability in certain circumstances. British Columbia allows for the designation of minor contributor status, in an attempt to mitigate some of the effects of joint and several liability. Quebec's system provides for proportional liability as the default approach, with joint and several liability applying if there is not sufficient evidence to support allocation.

The Canadian jurisdictions reviewed are beginning to incorporate the use of third party expert review and certification into their regulatory systems. This may well be a hallmark of governments dealing with limited resources. British Columbia and Quebec both provide for a roster of experts to be determined by the Minister or other government officials, while Ontario sets out the necessary qualifications for experts in its regulations.

The jurisdictions reviewed generally did not address the effect of changing remediation standards on liability or remediation obligations, although it appears possible that British

Columbia may intend to be able to impose liability and remediation obligations in instances where conditions change on a site post-remediation.

With respect to the non-Canadian jurisdictions reviewed, the American jurisdictions offer some interesting approaches through use of both positive and negative incentives. Positive incentives that may be of interest include tax relief mechanisms and funds. A particular negative incentive of note is the ability for courts to impose increased damages/civil penalties against parties that default or otherwise do not cooperate in carrying out remediation. In some instances, these damages can be triple the standard fine provided for under the legislation. While this is an intriguing option, it is one that should be approached cautiously in Canada to avoid the possibility of being held to be legislating in the federal criminal law jurisdiction by imposing prohibitive penalties. The United Kingdom and Netherlands both rely fairly heavily on risk management approaches. Much of the Netherlands approach is likely not practical for Alberta, given the Netherlands' aggressive agenda for site remediation and the extensive government involvement and funding that is required. The United Kingdom approach relies heavily on the involvement of municipalities, which again may not be practical in the Alberta context, given the range of capacities and resources available to Alberta municipalities.

APPENDIX A

CANADIAN LEGISLATION AND POLICY RELEVANT TO CONTAMINATED SITES

Alberta

- *Environmental Protection and Enhancement Act*, R.S.A. 2000, c. E-12.
- *Guideline for the Designation of Contaminated Sites Under the Environmental Protection and Enhancement Act* (Edmonton: Alberta Environment, 2000).

British Columbia

- *Environmental Management Act*, S.B.C. 2003, c. 53.
- *Contaminated Sites Regulation*, B.C. Reg. 375/96.

Manitoba

- *Contaminated Sites Remediation Act*, C.C.S.M., c. C205.

Ontario

- *Environmental Protection Act*, R.S.O. 1990, c. E.19.
- *Brownfields Statute Law Amendment Act*, S.O. 2001, c. 17.
- *Draft Brownfields Regulation – Records of Site Condition – Part XV.1 of the Act*, EBR Registry Number RA03E0002.

New Brunswick

- *Clean Environment Act*, S.N.B., c. C-6.
- *Clean Water Act*, S.N.B., c. C-6.1.
- *Guideline for the Management of Contaminated Sites* (1999).

Nova Scotia

- *Environment Act*, S.N.S. 1994-95, c. 1.
- *Guidelines for Management of Contaminated Sites in Nova Scotia* (Halifax: Nova Scotia Department of Environment, 1996).

Prince Edward Island

- *Environmental Protection Act*, R.S.P.E.I. 1988, c. E-9.
- *Petroleum Contaminated Site Remediation Guidelines* (Charlottetown: Prince Edward Island Department of Technology and Environment, 1999).

Quebec

- *Environment Quality Act*, R.S.Q., c. Q-2.
- *An Act to amend the Environment Quality Act and other legislative provisions with regard to land protection and rehabilitation*, S.Q. 2002, c. 11.
- *An Act respecting land use planning and development*, R.S.Q., c. A-19.1.
- *Civil Code of Quebec*.
- *Land Protection and Rehabilitation Regulation*, R.R.Q. 1981, c. Q-2, r. 18.1.01.

Saskatchewan

- *Environmental Management and Protection Act, 2002*, S.S. 2002, c. E-10.21.
- *Contributory Negligence Act*, R.S.S. 1978, c. C-31.

Northwest Territories

- *Environmental Protection Act*, R.S.N.W.T. 1988, c. E-7.
- *Environmental Guideline for Contaminated Site Remediation* (Yellowknife: Northwest Territories Resources, Wildlife and Economic Development, 2003).

Nunavut

- *Environmental Protection Act (Nunavut)*, R.S.N.W.T. 1988, c. E-7, as enacted for Nunavut, pursuant to the *Nunavut Act*, S.C. 1993, c. 28.

Yukon

- *Environment Act*, R.S.Y. 2002, c. 76.
- *Contaminated Sites Regulation* (1996).

Canada

- *Canadian Environmental Protection Act, 1999*, S.C. 1999, c. 33.
- *Fisheries Act*, R.S.C. 1985, c. F-14.
- *Bankruptcy and Insolvency Act*, R.S.C. 1985, c. B-3.
- *Treasury Board Federal Contaminated Sites Management Policy* (Ottawa: Treasury Board of Canada, 2002).

APPENDIX B

SUMMARY OF RECOMMENDED CONTAMINATED SITE LIABILITY PRINCIPLES

Excerpted from *Contaminated Site Liability Report: Recommended Principles for a Consistent Approach Across Canada*
(Winnipeg: Canadian Council of Ministers of the Environment, 1993)

1. The principle of "polluter pays" should be paramount in framing contaminated site remediation policy and legislation.

2. In framing contaminated site remediation policy and legislation, member governments should strive to satisfy the principle of "fairness".

3. The contaminated site remediation process should enshrine the three concepts of "openness, accessibility, and participation".

4. The principle of "beneficiary pays" should be supported in contaminated site remediation policy and legislation, based on the view that there should be no "unfair enrichment".

5. Government action in establishing contaminated site remediation policy and legislation should be based on the principles of "sustainable development", integrating environmental, human health and economic concerns.

6. There should be a broad net cast for the determination of potential responsible persons. However, prior to entering the actual liability-allocation stages of the process, the following persons should have a conditional "exemption" based upon clearly defined statutory exemptions: (a) Lenders; lenders who hold a security interest in the property of a borrower should be granted a pre-foreclosure exemption from liability, beyond the outstanding balance of the debt, unless the lender had actual involvement in the control or management of the business of the borrower; and (b) Receivers, Receiver Managers, Trustees (including trustees acting in a fiduciary capacity); these persons should be exempt from personal liability for pre-existing contamination, and only be liable if they fail to take reasonable steps to prevent further contamination, or otherwise fail to satisfactorily address ongoing environmental concerns at the site.

7. Remediation legislation should provide the necessary authority and means to enable the recovery of public funds expended on the remediation of contaminated sites from those persons deemed to be responsible for such sites. Furthermore, member governments should strive to achieve environmental priority over all other claims or charges on an estate that has entered receivership or bankruptcy.

8. Member governments should pay particular attention to the design of a process which will facilitate the efficient cleanup of sites and the fair allocation. of liability. Further, this process should discourage excessive litigation to the maximum extent possible by promoting the use of alternative dispute resolution procedures.

9. A list of factors should be established for use in the liability-allocation process to allocate the liability of responsible persons depending upon the specific circumstances of their involvement, and in relation to the involvement of other responsible persons. The following list of "liability allocation factors" is suggested for use in cases where there is more than one responsible person to be considered in the allocation process. The list may not be exhaustive. Liability allocation factors:

   a. when the substance became present at the site;

   b. with respect to owners * or previous owners, including, but not limited to:

      i. whether the substance was present at the site when he took ownership;

      ii. whether the owner ought to have reasonably known of the presence of the substance when he took ownership;

      iii. whether the presence of the substance ought to have been discovered by the owner when he took ownership, had he taken reasonable steps to determine the existence of contaminants at the site;

      iv. whether the presence of the substance was caused solely by the act or omission of an independent third person;

      v. the price the owner paid for the site and the relationship between that price and fair market value of the property had the substance not been present at the site at the time of purchase;

   c. with respect to a previous owner, whether that owner sold the property without disclosing the presence of the substance at the site to the purchaser;

   d. whether the person took reasonable steps to prevent the presence of the substance at the site;

   e. whether r the person dealing with the substance followed the accepted industry standards and practices of the day;

f. whether the person dealing with the substance followed the laws of the day;

g. once the person became aware of the presence of the substance, did he contribute to further accumulation or the continued release of the substance;

h. what steps did the person take on becoming aware of the presence of the substance, including immediate reporting to and cooperation with regulatory authorities;

i. whether the person benefited from the activity resulting in the contamination, and what was the monetary value of their benefit;

j. the degree of a person's contribution to the contamination, in relation to the contribution of other responsible persons; and

k. the quantity and toxicity/degree of hazard of the substance that was discharged or otherwise released into the environment.

*Includes lessees and other occupiers.

10. Alternative Dispute Resolution (ADR) procedures should be made available by member governments as a means to resolve issues of liability for contaminated sites. For example, a four-step allocation process could be implemented as follows:

Step 1 - Voluntary allocation - Upon designation of a contaminated site, and designation of responsible persons, the affected persons should be given a reasonable time-bound opportunity to allocate the cost of cleanup among themselves.

Step 2 - Mediated Allocation - Failing Step 1, the persons will be required to enter into an allocation process whereby an independent person or body will mediate a settlement.

Step 3 - Directed Allocation - Failing Step 2, the persons will be required to enter into an allocation process whereby an independent person or body will make an arbitrated apportionment of liability based upon its findings.

Step 4 - Failing Steps 1, 2 and 3, liability will default to joint and several liability among all responsible persons.

11. Discretion should be retained by member governments to designate sites as contaminated sites; however, for the purposes of better predictability, governments should clarify their policies for determining which sites are to be designated, with a view to eventually harmonizing their site-designation processes. These site-designation policies should designate sites based upon (a)

risk to human health; and (b) extent of environmental risk. In addition, there should be public input into the evaluation of significant sites being considered for designation, as well as public notice when a site designation occurs.

12. A "responsible person", who completes the cleanup of a contaminated site to the satisfaction of the regulatory authority, should be issued an official "certificate of compliance" by that authority, certifying that the site has been remediated to the required standards. These certificates, however, should expressly state that they are based on the condition of the contaminated site as at the date of issuance and that the remediation undertaken met the standards of the day; and that the responsible person may be liable for future cleanup ("prospective liability"), should further contamination subsequently be discovered.

13. Benchmarks should be developed for the remediation of contaminated sites, which will vary depending upon the land usage and site location of a particular site. The use of such benchmarks will allow remediation plans or orders to be tailored on a site-specific basis. There should be full public input into the development of these benchmarks.

APPENDIX C

ADOPTION OF CCME CONTAMINATED SITE LIABILITY PRINCIPLES INTO CANADIAN LEGISLATION

LEGEND

Legislation	**L**
Regulation	**R**
Policy	**P**

	AB	BC	MB	ON	NB	NF	NS	PI	QU	SK	NT	NU	YK	FED
REC 1	L	L	L	L			L		L	L		L	L	P
REC 2	L	L	L				L		P					
REC 3	L	L	L	L			L		L				L	
REC 4	L		L				L							
REC 5	L	L	L				L		P				L	
REC 6*	L/P	L	L	L	L	L	L	L	L	L	L	L	L	L
REC 7(a)	L	L	L	L			L		L			L	L	
REC 7(b)*	L	L	L	L	L	L	L	L	L	L	L	L	L	L
REC 8	L	L	L				L						R	
REC 9	L	L	L				L						R	
REC 10	L	L	L				L						R	
REC 11	L/P	L/R	L				L		L				R	
REC 12	L	L	L	L			L						L	
REC 13	P	R	L						P				R	P

NOTES:

- Recommendation 6: Limitation of liability for receivers and trustees in bankruptcy is in place in all Canadian jurisdictions through operation of the federal *Bankruptcy and Insolvency Act*, s. 14.06(2).
- Recommendation 7(b): Priority for government remediation costs in receiverships and bankruptcies is in place in all Canadian jurisdictions through operation of the federal *Bankruptcy and Insolvency Act*, s. 14.06(7).

APPENDIX D - SUMMARY TABLE OF CONTAMINATED LAND PROGRAMS IN FOUR SELECTED PROVINCES

PROGRAMS	Alberta	British Columbia	Ontario	Quebec
Statutory Authority	*- Environmental Protection and Enhancement Act*	*- Environmental Management Act*	*- Environmental Protection Act*	*- Environment Quality Act*
Voluntary Cleanup				
Fee	No	No	No	No
Eligibility	Designated contaminated sites	Any responsible person; full information disclosure	N/A	Any site
Incentives	Protection from issuance of environmental protection order	Discharge from liability other than under agreement; possible delay of commencement of remediation	N/A	None specified
Brownfields				
Inclusion Criteria	Petroleum underground storage tank remediation program (2000-02): Municipally held former retail sites; active small retail sites; temporarily closed (< 2 years) small retail sites	N/A	Dependent on terms of specific municipal bylaws; subject to municipal community improvement plan	N/A
Incentives	Max. $10,000/site for environmental site assessment; max. $100,000/site for remediation	"Land Remediation Fund" planned	Cancellation of all/part of mun. & school taxes for specified period; mun. tax freeze for specified period; grants/loans under community improvement plan	N/A

PROGRAMS	**Alberta**	**British Columbia**	**Ontario**	**Quebec**
Liability				
Retroactive	Yes	Yes	Yes	Yes
Joint and several	Yes	Yes	Yes	Yes
Proportional	Yes	Yes	No	Yes
Regulatory Tools				
Punitive Damages	N/A	N/A	N/A	N/A
Civil Penalties	Individual – up to $50,000 per day Corporate – up to $500,000 per day	Up to $200,000 or 6 months imprisonment or both	Individual – up to $50,000 first offence & $100,000 subsequent &/or up to 1 year imprisonment Corporate – up to $250,000 per day first offence & $500,000 per day subsequent	Individual – up to $20,000 first offence & $40,000 subsequent &/or up to 1 year imprisonment Corporate – up to $250,000 first offence & $1,000,000 subsequent
Property Transfer				
Disclosure required	No	Yes – site profile	Limited	Yes
Government data base	No	Yes – site registry	Yes – Environmental Site Registry	Yes – land registry; municipal registers

APPENDIX E - SUMMARY TABLE OF CONTAMINATED LAND PROGRAMS IN FOUR SELECTED STATES

PROGRAMS	Massachusetts	Michigan	California	Oklahoma
Statutory Authority	*- Oil and Hazardous Material Release Prevention and Response Act*	*- Natural Resources and Environmental Protection Act* *- Brownfields Development Act* - Single Business Tax Amendment *- Obsolete Property Rehabilitation Tax*	*- Hazardous Substance Account Ac,* - Cal. Health and Safety Code *- Hazardous Substance Cleanup Bond Act of 1984*	**- Solid Waste Management Act** *- Hazardous Waste Management Act* *- General Regulation and Enforcement* *- Hazardous Waste Fund Act* *- Brownfields Voluntary Redevelopment Act*
Voluntary Cleanup				
Fee	Varies	Yes	No	No
Eligibility	All sites requiring direct State oversight (Tier 1)	All except for parties subject to judicial review	All sites except federal Superfund, Military, and LUST sites, or those outside of state jurisdiction	All sites, except those outside of state jurisdiction i.e. (TSCA, LUST) they refer the applicant
Incentives	Stream lined cleanup process, no waiting period, clear endpoints	Liability exemptions, financial incentives including grants, loans, tax increment financing, tax credits and abatements	Control over cleanup timing	Letter stating work is complete, financial incentive, low interest loans to municipalities.
Brownfields				
Inclusion Criteria	Available at any site but depend on ownership	Properties that have redevelopment potential and are contaminated above residential standards.	Sites with perceived or actual contamination that are underutilized due to perceived remediation costs and liability concerns.	Sites with perceived or actual contamination with regulated substances
Incentives	Liability endpoints, funds for site assessment and remediation, state-subsidized environmental insurance, state credits for response action	Grants/loans for state conducted Brownfields cleanup, tax increment financing, state business tax credits, tax abatements.	Tax credits loans and grants for cleanup and limited liability relief.	Liability relief, covenant not to sue, Tax incentives for equipment, machinery, fuel, Financial incentive, low interest loans to municipalities, issuance of Brownfield certificates
Liability				
Retroactive	Yes	Yes	No	Yes
Strict	Yes	No	Yes	Yes
Joint and several	Yes	Yes	No	Yes
Proportional	No	Yes	Yes	No

SUMMARY TABLE OF CONTAMINATED LAND PROGRAMS IN FOUR SELECTED STATES (cont'd)

PROGRAMS	**Massachusetts**	**Michigan**	**California**	**Oklahoma**
Regulatory Tools				
Punitive Damages	Treble	Treble	Treble	None
Civil Penalties	\$25,000 per day	Up to \$25,000 per day	\$25,000 per day per violation	\$25,000 per day hazardous waste violation, \$10,000 per day for any other violation
Clean Up Criteria				
Risk Assessment (Carcinogen)	10^{-5}	10^{-5}	10^{-6}	10^{-4} to 10^{-6}
Risk Assessment (non-Carcinogen)	Hazard Index = 1	n/a	Hazard Index = 1	Hazard Index = 1
Property Transfer				
Disclosure required	No	Yes	Yes	Yes
State data base	Yes	Yes	Yes	No
Long Term Stewardship				
Monitoring	Yes	Yes	Yes	Yes
Institutional Controls	Yes	Yes	Yes	Yes
Enforcement	Yes	Yes	Yes	No
Re-evaluation	Yes	No	Yes	No
Database	Yes	No	Yes	No
Audits	20% of all sites annually	No specific review program	No	No set schedule, self implementing controls preferred
Funding sources				
	1 Bond, 1 Loan, 1 Fund	1 Bond, 3 Funds	1 Bond, 1 Account	2 Funds

APPENDIX F

SUMMARY TABLE OF CONTAMINATED LAND PROGRAMS IN THE UNITED KINGDOM

Voluntary Cleanup	
Fee	No
Eligibility	- For "appropriate persons" acting voluntarily - May require planning authority.
Incentives	No
Brownfields	
Inclusion Criteria	"Previously developed" land
Incentives	Various grants available, disposal of contaminated soil to licenced landfills may be exempt from landfill tax.
Liability	
Retroactive	Yes
Strict	No
Joint and several	No
Proportional	Yes
Regulatory Tools	
Punitive Damages	No
Civil/Criminal Penalties	Yes
Clean Up Criteria	
Risk Assessment	- "best practicable technique", considering effectiveness, reasonableness, practicability, durability and other. - Data sheets for various clean up methods have been developed
Property Transfer	
Disclosure required	No
Data base	land use database
Long Term Stewardship	
Monitoring	Yes (as part of the Remediation Notice)
Institutional Controls	No
Enforcement	Yes
Re-evaluation	Yes
Database	No
Audits	Yes
Funding sources	
	Supplementary Credit Approval Scheme - to help local authorities fund the clean up of orphan sites

APPENDIX G

SUMMARY TABLE OF CONTAMINATED LAND PROGRAMS IN THE NETHERLANDS

Statutory Authority	*Soil Protection Act, 1994*
Voluntary Cleanup	
Fee	n/a
Eligibility	n/a
Incentives	Soil remediation Fund, Financial and Tax incentives
Brownfields	
Inclusion Criteria	n/a
Incentives	Funding, Grants
Liability	
Retroactive	Pre 1987 – different cleanup objectives are applied
Strict	n/a
Joint and several	n/a
Proportional	Yes
Regulatory Tools	
Punitive Damages	n/a
Civil/Criminal Penalties	Yes
Clean Up Criteria	
Risk Assessment	A cornerstone of cleanup objectives, urgency of cleanup
Property Transfer	
Disclosure required	n/a
Data base	n/a
Long Term Stewardship	
Monitoring	Yes
Institutional Controls	Yes
Enforcement	Yes
Re-evaluation	Yes
Database	n/a
Audits	n/a
Funding sources	
	Yes – National Ministry Funds